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THE

INDUSTRIAL RESOURCES, ETC.,

OF THE

SOUTHERN AND WESTERN STATES :

EMBRACING A VIEW OF THEIR

COMMERCE, AGRICULTURE, MANUFACTURES, INTERNAL IMPROVEMENTS,
SLAVE AND FREE LABOR, SLAVERY INSTITUTIONS,
PRODUCTS, ETC., OF THE SOUTH,

Together with

HISTORICAL AND STATISTICAL SKETCHES OF THE DIFFERENT STATES AND CITIES OF
THE UNION—STATISTICS OF THE UNITED STATES COMMERCE AND MANUFACTURES,
FROM THE EARLIEST PERIODS, COMPARED WITH OTHER LEADING POWERS—THE
RESULTS OF THE DIFFERENT CENSUS RETURNS SINCE 1790, AND RETURNS OF THE
CENSUS OF 1850, ON POPULATION, AGRICULTURE AND GENERAL INDUSTRY, ETC.,

WITH AN APPENDIX.

IN THREE VOLUMES.

VOL. III.

BY J. D. B. DE BOW,

PROFESSOR OF POLITICAL ECONOMY, ETC., IN THE UNIVERSITY OF LOUISIANA.

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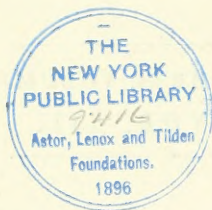
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Vol. III. -

The two opening papers in the volume, upon Southern Direct Trade and Commerce, are from the pen of Lieut. M. F. Maury; the one on Southern Industry is by Gov. Hammond; those on the Future of the South and Southern Industry are by Thos. P. Kettell; The South's Position in the Union was contributed by Dr. Cartwright; South, How Affected by her Slave Institutions, by D. J. McCord; South, Value of Life in, by Dr. J. C. Nott; South Carolina Capabilities, Gov. Seabrook; the two papers on Sugar, pp. 195, 207, are by J. P. Benjamin; that on Turpentine, page 350, by Edwin Heriot; on United States Immigration, by J. B. Auld; on Virginia, by R. G. Barnwell.



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INDUSTRIAL RESOURCES, ETC.,

OF THE

SOUTHERN AND WESTERN STATES.

SOUTHERN DIRECT FOREIGN TRADE.—Some twelve or fifteen years ago there was a move at the South in favor of direct trade. Conventions were held at various places, and resolutions were passed binding the merchants of the South, like the oath which old Neptune administers to sailors when crossing the line—"Never to kiss the maid when they can kiss the mistress, unless they like the maid the best:"—"never to eat hard bread when they can get soft, unless they prefer the hard." So our conventions resolved, that southern merchants should never buy in the North, when they could purchase at the South, unless they could buy cheaper at the North.

We thought then, that much might be done to recover back to the South its lost trade. But we were of opinion that it could not be done merely by taking sailors' oaths, or by passing Neptunian resolutions. It could not, we thought, be done, unless merchants would put their hands in their pockets; but this they were not prepared to do. And so the impulse then given to southern commerce ended, we believe, with a cargo or two of sugar that was imported from the West Indies into Norfolk *direct*, instead of being carried right by the capes of Virginia to New-York, and then sent from there back to Norfolk.

We mind the time well when these conventions took place; our heart was in the move, and our spirit went along with the delegates every time. It was in 1837-8, along there—when the British government was about writing Q. E. D. to the practical demonstration which the "Sirius," the "Liverpool," and the "Great Western," were just then giving to the great problem of Ocean Steam Navigation.

France, the French, and the King of the French, were burning with the desire not to be outdone by England. They had the money ready, and were looking for a port on this side to which they might start an opposition line of steamers. It was then proposed that the South should offer to take part of the stock, provided the French would select Norfolk as the terminus for their line—and thus get the line into the hands of Americans, for we "felt it in our bones," that, even at that day, we could beat John Bull.

We did succeed in impressing *one* gentleman, at least, with our notions. Him we knew well; he was an enterprising, go-ahead fellow. *Requiescat!* Captivated with the idea of subsidizing the French in the noble enterprise, he petitioned the Virginia legislature to grant him the charter for an Atlantic Steam Navigation Company. He wanted no privileges, no favors, but simply the charter; for he was sure that with the charter and his energies, he could gain the French over as allies and induce them to select Norfolk for the American terminus of their line.

The legislature refused the charter. The French, meeting with no sympathy on this side, receiving no overtures from the South to send their boats to Norfolk, proceeded to build their vessels. They selected New-York for their American station, and sent over their steamers filled with officers and servants so bedizened with "toggerly," that passengers could not tell one from the other. Finally, after a trip or two, one of these steamers, loaded down with passengers and freight, put to sea from New-York, and after getting fairly out into blue water, discovered that the sugar had been forgotten. The captain made a speech at the breakfast table the next morning, and offered to put back for sugar if the passengers would say so: but it was too late. The passengers had already become *sour*. This sugar business broke up the line. Johnny Crapo retired from the contest, and left the field to John Bull, to be by him enjoyed without a competitor for some ten or twelve years.

No human sagacity could penetrate clearly enough into the future then, to see all that has since actually turned up in the way of ocean steam navigation and steamship enterprises; but there is little or no doubt that, had the suggestions of this journal, at the time they were made, been adopted by the advocates of direct trade in the South—that, had the legislature of Virginia granted that ocean steam navigation charter, Norfolk would at this day have been the centre of steamship enterprise for the United States.

The French steamers would have been built there; they would have been commanded and controlled by Americans who would *never forget their sugar, nor make their passengers sour.*

This would have established foundries, machine-shops, and ship-yards at Norfolk, and have placed her ten or fifteen years ahead of New-York in the steamship business. Norfolk would then have been enabled to get the contracts from the government for establishing those lines of splendid steamers that are now giving such a tremendous impetus to the business, the trade, travel and traffic of New-York. The lines to the isthmus would have belonged to Norfolk. Hers would probably have been the Havre and Bremen lines. And the Old Dominion might have claimed also what is now the "Collins' line."

Geographically speaking, Norfolk is in a position to have commanded the business of the Atlantic seaboard. It is midway the coast. It has a back country of surprising fertility—of great capacity and resources; and as far as the approaches from the sea are concerned, its facility of ingress and egress, at all times and in all weathers, there is from Maine to Georgia, from the St. John's to the Rio Grande, nothing like Norfolk.

The waters which flow past Norfolk into the sea, divide the producing from the consuming states of the Atlantic slope—the agricultural from the manufacturing—the ice ponds of the North from the cotton fields at the South—the potato patch from the rice plantation—the miner from the planter. And these same waters unite at this one place the natural channels that lead from the most famous regions in the country for corn, wheat and tobacco, to the great commercial marts.

In order to satisfy any one of the vast natural advantages which Norfolk has over any other Atlantic seaport, let us compare the back country which naturally belongs to this ancient borough and modern city, with that which naturally belongs to New-York. We hope the reader will refer to a map of the United States, and with his pencil trace a line on it to include all the country which is drained into the Hudson River:—for that is the back country which naturally belongs to the city of New-York.

Now let him, in like manner, draw another line to include within it all the country that is drained into the Chesapeake Bay; for this is the back country which naturally belongs to Norfolk. To do this, he will begin and run along upon the ridge—the "Divide," the western people call it—between the Delaware and the Chesapeake.

Running thence northwardly, his pencil-mark will include all of Pennsylvania that is in the valley of the Susquehanna—all of Maryland this side of the mountains—the valley of the Potomac, the Rappahannock, the York and the James rivers, with the valley of the Roanoke and a great part of the State of North Carolina, whose only outlet to the sea is via Norfolk.

Such is the back country that nature has given to Norfolk for her commercial founda-

tion—and such to New-York for the cornerstone of her commercial edifice.

Virginia saw these advantages, and slept upon them. She knew that Nature had placed them there, and made them hers. She never dreamed that man could take them away. But man has. The enterprise of man has extended the back country of New-York from the sea to the lakes; from the waters of Long Island Sound to the waters of the Gulf of Mexico. It has turned the commerce of the St. Lawrence down the Hudson, and placed the mouth of the Mississippi as much at Sandy Hook as it is at the Balize.

Thus did New-York while Virginia was sleeping. Just as she was beginning to wake up, chance and the course of events threw in her way the steamship enterprise of the French. Her merchants, however, could not get their hands in their pockets, or rather they stood with their hands in their pockets for ten years, and quietly looked on while New-York was projecting her plans, displaying her enterprise, and monopolizing all those steam advantages; and now that New-York has got fairly under way, they in the South are again rousing up the people and calling their conventions in favor of steamships and direct trade. Better late than never. We welcome the move with all our heart, and mean to support it with all our strength—save and except the Neptunian resolutions. We do not go for them.

We do not wish to discourage the move for a line of steamers from Norfolk to Europe, as great as the odds against Norfolk now are. We know that there are business men in the South, who, if once they put their hands in their pockets and their shoulders to the wheel, have energy, enterprise and capacity enough for anything that energy, enterprise and capacity can effect.

While we do not wish to discourage that move, therefore, we have a proposition to make, which, by timely adoption, will, we think, do much towards recovering for the South her lost advantages, and that with interest. This proposition is another steamship enterprise. It may meet the fate of the former one, but if so, the end of the next fifteen years will show its rejection to be a piece of short-sighted policy, more to be deplored than all the inaction heretofore observed by Virginia with regard to her natural resources and commercial advantages.

The South wants to regain her direct trade. Let us first examine how the South came to lose it, and the North to get it. We shall then know the better how to proceed, and what to do towards recovering it.

The course of navigation from Europe to this country used to be down along the coast of Africa to the region of the north-east trade winds. These winds are fair winds for getting to the westward. Ships took them, and with them ran over to the United States;

falling in with the southern coast first, and making the land of Charleston or the capes of the Carolinas or of Virginia, they would then take a fresh departure for New-York, Boston, or their port of destination, wherever it was, among the New-England states.

This made of Charleston and Norfolk a sort of relay station, and placed them on the way-side of the commercial highway, leading from Old to New-England.

It was rarely that vessels were found in those days to sail more than four or five knots under the most favorable circumstances. About two miles the hour was the average rate of speed for merchantmen in those days. It was not so fast as the gulf stream would carry a log.

Along the route now pursued by vessels bound from Liverpool to New-York, the winds are adverse, and the gulf stream has to be stemmed nearly all the way. The merchantmen of the last century were incapable of beating up against wind and tide both; consequently the northern passage was closed to them, and the usual route was to follow the track of Columbus—pass through the Sargasso Sea, catch the north-east trades, and getting on the parallel of some southern port in America, to steer due west until they made the land.

If the merchantman of that day, after thus making her land-fall, ascertaining her position and keeping away for her port, met a north-west gale or a snow-storm, as in winter she was very apt to do off New-York or Boston, her course was to run back south, and to lie in Charleston until the next spring, waiting for good weather and a fair opportunity for going northward again.

Though the existence of the gulf stream was known more than two centuries ago, the fact that its waters were warmer than those of the sea along side of it, and the idea that this difference of temperature could be made available for longitude at sea, was not promulgated to navigators until 1796-7.

This is an epoch in navigation, and from it commences an era in the course of trade between the old world and the new.

In those days, if the mariner at sea could lay his out-spread hand down upon his chart, and say that it certainly covered the place of his ship, he was called a "lucky dog," and entitled to be considered a navigator.

We beg leave to illustrate, and to instance, as we go along: In 1779, when John Adams was returning to the United States from his first mission to France, he came in a French man-of-war, and men-of-war were much better navigated in those days than merchantmen. After leaving the shores of France, they did not *discover* their longitude until they got soundings in the waters of America.

We quote from his diary.

"Saturday, 17th." It was July. "Three

days past we have sounded for the Grand Bank, but have not found it."*

Two weeks after that, viz., on the 31st, when they did find bottom, he remarks: "The weather, the wind, the *discovery of our longitude*, give us all fine spirits this morning."

A modern vessel would sail across the Atlantic while the frigate "Sensible" was seeking her longitude.

Such was the course of navigation, such the difficulties in the way of trade across the Atlantic prior to 1796, that Charleston and Norfolk, of necessity, became the half-way houses, the great entrepôts of traffic, the points of communication between Europe and the "colonies."

From 1776 dates a new era in the political affairs of this country—and from 1796—twenty years after—and so on at intervals of twenty years, dates regularly a new era in the affairs of commerce and navigation.

Then, in '96, it was made known to navigators how, by dipping a thermometer into the water as they approached our shores, they might tell whether they were in or out of the gulf stream—whether they were on this or that side of it, and consequently know their longitude. This was a discovery. It was hailed as such by the whole sea-faring community. Works were written on "Thermal Navigation;" and the streaks of hot and cold water in and near the gulf stream, were likened to blue and red ribbons, which Providence had stretched on the green bosom of the Atlantic, to warn the navigator of his approach to our shores, and to tell his longitude.

At that time, too, great improvements in naval architecture were about to take place. The keels of the fastest ships that we have in our navy at this day were laid then.

These discoveries and improvements enabled ships bound from Europe to approach the coast of the United States with the gulf stream for a beacon; and they, moreover, enabled merchantmen, by being swift of foot, to turn the windward better, and consequently to beat over from Europe against the gulf stream and the prevailing westerly winds of the direct route.

Thus traders began to come direct to our northern ports, instead of first touching at the southern for a land-fall and good weather.

Thus Charleston ceased to be a half-way house, and was made an outside station. The South, quietly and in silence, looked on while this revolution was making its changes.

After another period of twenty years, viz., in 1816, another era in commercial affairs, and the business of the sea, was commenced. In that year, Jeremiah Thompson, Isaac

* Life and Works of John Adams, Vol. III. pp. 226-7.

Wright, and others—in honor of whom the city of New-York should erect a monument—commenced the system of packet ships.

They put three vessels of 300 or 400 tons each, on the line to Liverpool, to sail on stated days regularly once a month, or thereaway. The croakers all thought, and many said, that these ships would be “no go”—that they were entirely too large, and that often the day of sailing would arrive when there would be neither freight nor passengers to take. But the staid old Quaker who was in the concern knew what he was about. He sailed on the regular day, and gave his captains the postage upon all the letters conveyed to and fro, and for a quick passage he promised them a new gown for their wives, sometimes a new coat for themselves.

The “Liners,” as the packet ships of New-York came to be called, went on increasing in numbers and size and in favor with merchants and ship-owners, until the sea became white with their sails, and New-York the focus from which they diverged to all ports of the world, and to which they all returned.

Opposition lines were got up to Liverpool, and independent ones established to London and Havre. Besides these, lines of packet ships, packet brigs, and packet schooners were established between New-York and every seaport town in the United States. They all had their regular day of sailing, and daily fleets of them were to be seen going out and coming into the harbor of New-York.

Having their regular days of sailing for New-York, they would bring anything at any rate of freight that would pay for putting in and taking out, rather than return empty. Hence they would take for a mere song, pine wood from Virginia, naval stores from North Carolina, stones from New-England, ores from Cuba, &c., which last were again taken without freight to England, because Cuba ores served for ballast.

Thus the packet system built up New-York, and made her the great central market for all the surplus produce of all sorts from all parts of the seaboard. Whatever the country produced for sale, samples of it were brought by the packets to the wharves of New-York, and thus the warehouses of that city became an immense variety store, in which is to be found whatever is to be bought or sold in the United States.

The packet ships carried the mails across the Atlantic. They made New-York the point of communication with the Old World; and they controlled the business of dispatch for the whole country. They were the “Adams’ Express” of the day. The merchants of the North and the South all sent by them for their spring and fall fashions—their

light goods, small parcels—all special orders were executed in that way. So completely had they monopolized everything for New-York, in the way of foreign business, travel, and correspondence, that in the year 1837, when they had served out their twenty years, there was not a single vessel that cleared from Boston for Liverpool. But they had run their twenty years, and another era in the business of commerce was about to arise.

In 1837 commenced the era of Ocean Steam Navigation, though twenty years before that the South had sent out an *avant courier* from Georgia; but the South rested content with the honor of being the first to stride across the Atlantic under steam. This was the time—’37—when the idea was thrown out that Virginia should offer to co-operate with the French and invite them to send their steamers into Norfolk.

The steamers, contrary to all expectations, gave an impulse to the packet ships, the packet ships re-acted upon the steamers, and both greatly increased in numbers and enlarged the business of the country. Boston got its line of steamers, sent its ships to Liverpool, and recovered all the trade, and more, too, that it had lost when steamers first began to ply.

The steamers, it was found, so far from interfering with the regular “Liners,” created a business of their own. New-York looked on quietly for ten years, before she understood this matter, or began to move in it. But New-York, during the interval, was feeling the way with English capital, as in the mean time Norfolk might have done with French. Finally, New-York got the federal government committed to the tune of many millions for her steamship enterprise. Thus backed up, New-York launched her ocean steamers, and now leads the world in that navigation.

There is room for opposition both to Europe and the gulf, but New-York is a powerful competitor, and the odds are now greatly in her favor.

It is curious to look back at the important commercial and political events which have taken place regularly at intervals of double decades, one after the other.

We commence with 1776: every generation continues in the majority for about twenty years. When the people, therefore, who had the ascendancy in ’76, had passed into the minority, their successors—the next generation—signalized the occasion and their accession to the majority, by turning the Atlantic coast, in a commercial point of view, upside down; by removing Charleston from the half-way to an outside station on the road between the old world and the new—for at that period the direct trade of Charleston alone was greater than that of New-York and all the New-England States toge-

ther. The philosopher, with no other instrument than the water-thermometer, did all this.

When this generation had fretted out its sway of twenty years in the majority, had reached its sere and yellow leaf, and passed into the minority, its successor signalized its installation by the establishment of the packet system—a system which is at the bottom and the top of New-York's commercial ascendancy, operating as a sort of first principle among the real causes of the great business prosperity of that city.

If we were asked to trace back to the very source those influences which first obtained expression in the construction of the Erie canal, we should point to the water-thermometer and the packet system. It was on account of the prosperity, the commercial advantages, power and influence, that New-York derived from these, that she was enabled to undertake that work. Each new work added more and more to her power and wealth; but the key to it all, the very foundations of that wealth and power, commenced with the water-thermometer and were laid in the packet system. The water-thermometer and the packet system gave her the power to remove the commercial mouth of the St. Lawrence from the Straits of Belleisle to Sandy Hook—to turn the Mississippi valley upside down, causing the produce thereof to flow north and enter the sea under the highlands of Neversink.

These are go-ahead times, and the rising generation is crowding so fast upon us of the Ocean Steam Navigation era, that, though we have but five years of our allotted time left to run, we doubt whether our successor will not crowd us out before the full term of our double decade shall have expired.

Before 1857, we hope to see the Isthmus pierced with commercial thoroughfares and great national highways—before '57, we hope to see the proposition which we have to make, in full blast, recovering and restoring back to the South in ten-fold measure, all its lost advantages—its foreign commerce, its direct trade, its importing business, and commercial prosperity.

Great Britain and Europe are not the only countries in the world with which commercial intercourse is desirable; nor are they the only ones whose trade can enrich and make prosperous.

Let the *South* not forget to look to the *South*. Let her study the immensity of the commercial resources which lie dormant in that direction. Let her see if she have not the ability now to hasten and assist the development of them; and being developed, to command, to reap, and enjoy them.

Behold the valley of the Amazon, and the great river-basins of South America. Unexplored there, is a wilderness of treasures;

all the elements of the most valuable commerce are there, and they are of easy development.

We hope the reader will consult the map as he follows us in what we are about to say.

Of more than twice the size of the Mississippi valley, the valley of the Amazon is entirely inter-tropical. An everlasting summer reigns there. Up to the very base of the Andes, the river itself is navigable for vessels of the largest class. The Pennsylvania 74 might go there.

A natural canal through the Caciquari connects it with the Orinoco. Giving drainage and fertility to immense plains that cover two millions of square miles, it receives from the north and the south innumerable tributaries, which, it is said, afford an inland navigation up and down of not less than seventy or eighty thousand miles in extent. Stretched out in a continuous line, the navigable streams of that great water-shed would more than completely encircle the earth around at its largest girth.

All the climates of India are there. Indeed, we may say, that from the mouth to the sources of the Amazon, piled up one above the other, and spread out, Andean-like, over steppe after steppe in beautiful unbroken succession, are all the climates, and all the soils, with the capacities of production, that are to be found between the regions of everlasting summer and eternal snow.

The valley of the Amazon is the place of production for India-rubber—an article of commerce which has no parallel as to the increase of demand for it, save and except in the history of our own great staple since the invention of the cotton gin. We all recollect when the only uses to which India-rubber was applied were to rub out pencil marks and make trap-balls for boys. But it is made into shoes and hats, caps and cloaks, foot-balls and purses, ribbons and cushions, boats, beds, tents, and bags; into pontoons for pushing armies across rivers, and into camels for lifting ships over shoals. It is also applied to a variety of other uses and purposes, the mere enumeration of which would make us tedious. New applications of it are continually being made. Boundless forests of the syringa tree are found upon the banks of this stream, and the exportation of this gum, from the mouth of that river, is daily becoming a business of more and more value, extent and importance.

In 1846-7, pontoons for the British army in India, and tents for the American army in Mexico, were made in New-England from the India-rubber of the Amazon. It is the best in the world.

The sugar-cane is found there in its most luxuriant growth, and of the richest saccharine development. It requires to be planted but once in 20 years.

There, too, are produced, of excellent quality and in great profusion, coffee and tobacco, rice and indigo, cocoa and cotton, with drugs of virtues the most rare, dyes of hues the most brilliant, and spices of aroma the most exquisite.

Soils of the richest loam and the finest alluvians are there; the climates of India, of the Moluccas and the Spice Islands, are all there; and there, too, lying dormant, are the boundless agricultural and mineral capacities of the East and West, all clustered together. If commerce were but once to spread its wings over that valley, the shadow of it would be like the touch of the magician's wand—those immense resources would spring right up into life and activity.

In the fine imagery of their language, the Indians call the Amazon the "King of Rivers." It empties into the ocean under the line.

Now look: Nature has scooped out the land in Central America, and cut the continent nearly in two there, that she might plant between the mouth of the "King of Rivers" and of the "Father of Waters," an arm of the sea capable of receiving the surplus produce which the two grandest river basins on the face of the earth are some day to pour out into the Gulf of Mexico and the Caribbean Sea. These two sheets of water form the great commercial lap of the South. This sea and gulf receive the drainage of all the rivers of note in both continents, except the La Plata on the south, and Columbia on the west, the St. Lawrence and those of the Atlantic seaboard on the east.

Excluding the inhospitable regions of Patagonia on the south, and Labrador on the north, and referring only to the agricultural latitudes, the two Americas cover an area of land, in round numbers, of about ten millions of square miles. To not less than six of this ten, this sea and gulf are the natural outlet. Of these six, about two-thirds are inter-tropical, producing a variety of articles to which the other parts of the continent never can offer competition. Nature has so ordered it.

With scarce the exception of a "ten mile square," the whole of this immense Caribbean water-shed, which is nearly double the area of Europe, is composed of fine, rich arable land. The rainless coasts of Peru, the sandy plains of Lower California, the great salt desert of the north, and the Sahara-like desert of Atacama at the south, all lie without it; they fall within the other four of the ten millions. They are unarable; and, therefore, as they are unfit for cultivation, they should be, in this classification, arranged with the inhospitable regions of Patagonia and Labrador. So classing these barren places, we discover the startling fact, that these two rivers are the natural outlets, and the Caribbean Sea and Gulf of Mexico are

the natural receptacles, for the surplus produce of nearly three-fourths of the whole extent of arable land in the two Americas. Moreover, these two marine basins of the south are also the natural outlet, north and south, for the productions of not less than 70° of latitude. The Mississippi runs south, and crosses parallels of latitude; it consequently traverses a great diversity of climates, and floats down to the gulf a great variety of produce—a large assortment of staples. Its tributaries flow east and west; and each one contributes to the main stream itself many productions that are peculiar to its own latitude and climate.

The Amazon flows east. It runs along a parallel of latitude. Save and except the changes due to elevation, its climates are the same, and its banks, from source to mouth, are lined with the same growth. Its tributaries run north and south, and the products supplied by one of these, to the main stream, are duplicates of the products to be contributed by all.

In our river valley, winter and summer, spring and autumn, mark the year and divide the seasons; in the other, the seasons are the wet and the dry, and the year is all summer. One valley is in the northern hemisphere, the other in the southern. When it is seed-time on one side, the harvest is ripe on the other.

The Caribbean Sea and Gulf of Mexico are twin basins. They are seas Mesopotamian, and wholly American. The great equatorial current having its *genesis* in the Indian Ocean, and doubling the Cape of Good Hope, sweeps by the mouth of the Amazon, and after traversing both Caribbean Sea and Gulf of Mexico, it meets with the gulf stream, and places the commercial outlet of that river almost as much in the Florida Pass as is the mouth of the Mississippi River itself. Two travelers may set out from the Yucatan Pass; one north for the sources of the Missouri, the other south for the head waters of the Amazon. If, when the former reaches the base of the Rocky Mountains, he will cut a tree down, and let it fall in the river, so that it will drift with the current without lodging by the way, it will meet in the Straits of Florida one cut and cast in the Amazon, by the other traveler, from the sides of the Andes, and floated down that river in like manner. The natural route of the drift wood from both to the open sea, is through the Gulf of Mexico, around the peninsula of Florida, and so out into the Atlantic through the gulf stream.

These twin basins are destined by Nature to be the greatest commercial receptacles in the world. No age, clime, nor quarter of the globe, affords any parallel or any conditions of the least resemblance to these which we find in this sea or gulf.

What other arm of the ocean is between two continents with opposite seasons? Where is there another gulf stream uniting the waters of an Amazon with the waters of a Mississippi—an extra-tropical with an inter-tropical river—and placing the commercial outlet of both before the doors of one and the same people? Where in the wide ocean, or the wider world, is there another Mesopotamian Sea, that is the natural outlet for a system of river basins draining an extent of arable and fertile lands greater than the continent of Europe can contain—that yield all the productions of the torrid and the temperate zones—and that are so situated withal, that from opposite hemispheres, with their opposite seasons, they will deliver into the markets a crop every six months? Famine can never visit such a land. The double chance of a crop in double hemispheres frees it from any such liability.

In consequence of the winds and currents of the sea, the course of navigation from the mouths of these two rivers, as well as from all parts of the gulf and Caribbean Sea, is such, as to compel every vessel that trades in their markets, whether it be with the produce of the great Amazonian valley at the south, or the mighty valley of the west—we repeat, the course of navigation is such as to compel every vessel so freighted for Europe, for Africa, for India—nay, for Rio de Janeiro and for South America itself, to pass the very offings of our southern ports on their way to market.

From the Gulf of Mexico, all the great commercial markets of the world are down hill. A vessel bound from the Gulf to Europe, places herself in the current of the gulf stream, and drifts along with it at the rate, for part of the way, of 80 or 100 miles a-day. If her destination be Rio, or India, or California, her course is the same as far north as the Island of Bermuda.

And when there shall be established a commercial thoroughfare across the Isthmus, the trade winds of the Pacific will place China, India, New-Holland, and all the islands of that ocean, down hill also from this sea of ours. In that case, the whole of Europe must pass by our very doors on the great highway to the markets both of the East and West Indies.

This beautiful Mesopotamian Sea is in a position to occupy the summit level of navigation, and to become the great commercial receptacle of the world. Our rivers run into it, and float down with their currents the surplus articles of merchandise that are produced upon their banks. Arrived with them upon the bosom of this grand marine basin, there are the currents of the sea and the winds of heaven so arranged by nature, that they drift it and waft it down hill and down

stream to the great market places of the world.

To one who has never studied the course of the winds and currents of the sea, and the influence which they exert upon the routes which vessels must pursue in order to accomplish their voyages to and fro across the ocean, it appears startling to be told that the shores of the southern states, of Florida and the Carolinas, are on the way-side of vessels bound from the mouth of the Amazon, the Orinoco and the Magdalena rivers to Rio de Janeiro as well as to Europe. The way out upon the high seas from the mouth of these rivers, and from that of the Mississippi, is practically one and the same.

To a vessel under canvas, Norfolk is not half as far, in point of time, from the mouth of the Amazon, as is Rio in Brazil.

On account of the winds and currents of the Atlantic, a vessel bound from the Amazon to Rio, has first to sail to the northward until she reaches the northern parallel of 25° or 30° before she can begin to stand south. It is the same, no matter what be her destination, provided it be not the West Indies, nor any of the ports in the Caribbean Sea, or Gulf of Mexico.

Norfolk and Charleston may be called half-way houses from the Amazon and the Gulf, to New-York, to England and Europe, and to all ports in Africa, South America, India, and around Cape Horn. Indeed, they are the half-way houses from Amazonia to all the markets of the world, the way to which is across the seas.

We wish to fix attention as to the great advantages which our geographical and physical position gives us of the United States, in contending for the commerce to which the valleys of the Amazon, the Orinoco and the Magdalena are destined at some day to give rise.

Before we submit the proposition which we design to make to the merchants of the South in particular, and to the people of these United States in general, we wish to call attention to another physical condition which nature has connected with the South American trade, and particularly with the commerce to which her river basins are to give rise. And that is, that not only do none of these river basins, but none of the continents of the southern hemisphere, afford the contrasts for forming sea-faring communities among their inhabitants. Who ever heard of Brazilian seamen, or of the "mariners of Peru?" We have heard of the Gaucho, and the Llaneros, and the horsemen of South America, but never of its seamen.

In order to become sailors, people must use the sea; and that they may use it, familiarity with it from boyhood and in early life is one of the pre-requisites. Preliminary to this pre-requisite is a deeply-articulated

shore-line—a sea-front richly indented with bays, bights, gulfs and harbors, thrusting themselves far up into the country on one hand, with capes, promontories and peninsulas pushing far out into the sea on the other—thus increasing the length of water line—thus bringing the inhabitants and the sea into close proximity and into the presence of each other.

Let any one of our readers who lives between the tide-water and the Blue Ridge, cast about him, in his neighborhood, and tell how many boys and young men have left it and their country-life to become sailors; small, indeed, is the number. Even there the people are too far from the sea to take to it for a living.

Now let him take the map and look at the stiff, rigid shore-line, not only of South America, but of the southern continent generally, and then let him compare their almost isleless coasts with the finely articulated and beautifully contrasted shore-lines of the northern hemisphere; the Gulf of Mexico with its gems; the peninsula of Florida; its string of islands; the sounds, and bays, and gulfs at the north; the Mediterranean, reaching a thousand miles and more back into the heart of the continent; the Red Sea, separating it almost in two; the Baltic and the Black; the gulfs and bays and bights and peninsulas of India and China. Let him look at these physical features; let him contrast the two hemispheres in this respect, and see how much more maritime in feature one is than the other; let him study these features on a map of the world, and he will perceive how that nature has decreed that the seat of maritime power, strength and greatness shall be in the northern, not in the southern, hemisphere.

Another condition required in the constitution of sea-faring communities is a negligently soil, or other sources of a scanty livelihood to the laboring man. In these days, men forsake the land for the sea only, when the sea affords better means of living than the land.

Where in the history of the world did the people of any nation ever become maritime in their habits, when their climates were mild, their soil kind, and lands cheap? There is no such instance on record. Who ever heard of bodies of men forsaking the cheap lands and beautiful climates of the Mississippi valley to become mariners, only that they may wring from the seas a hard-earned, coarse, sometimes scanty and often dangerous subsistence?

If the Mississippi valley do not produce seamen enough to fetch and carry its own produce across the ocean, and to do its own commerce, much less will that of the Amazon with its softer climates and more benignant soils.

Therefore, whatever be the extent of the business which the Amazon may have to offer commerce, the fetching and the carrying of it must be done by sailors from our own side of the equator. Why may they not be Virginia and Carolina sailors? Those states have along the sea-shore pine barrens poor enough to drive men, women and children all to sea for a living.

In the Amazonian trade, the winds for us are fair to go and fair to come. And we of the Atlantic sea-coast are the only people for whom they are favorable both ways.

The voyage from the capes of Virginia or from Charleston to the Amazon, is the most certain voyage, as to the length of time, that is to be found between any two ports in the Atlantic Ocean. In eighteen or twenty days, a sailing vessel can go and come, the year round. The N. E. trade winds carry her there; and they bring her back. They are "soldier's winds." Therefore, among the inducements which the South has to move her in the matter of commencing to establish commercial relations and business ties in that direction, is the future one of competing, in her own vessels and with her own sailors, for the carrying trade of that magnificent water-shed.

The proposition, therefore, which we have to make, is with regard to a line of steamers from Norfolk, Charleston or Savannah, to the mouth of the Amazon.

Para is its "New-Orleans." It is the city at its mouth. It has a population of some 15,000 or 20,000 inhabitants. There is a line of steamers already in operation from Rio to Para.

From Savannah to Para, the distance is about 2,500 miles; from Para to Rio, 2,100. This, at the rate of the best performance of Collins' steamer "Baltic," would give for the passage between Rio and the United States thirteen days for coming and thirteen for going.

The time occupied now in going and coming by sailing vessels, is about ninety days.

Suppose we lengthen this computed passage, and base our estimates upon the supposition that the time to Rio, by this line of steamers, will readily require twenty instead of thirteen days, viz.: ten to Para and ten thence to Rio.

The effect of such a communication would be to turn the whole correspondence and travel connected with the Atlantic slope of South America, through Norfolk, or whatever port may be selected for the American terminus of the line. No European nation can successfully compete with us in this line of steamers, because their distance from Para is more than double ours.

Now it should be recollected that our com-

mercial transactions with Brazil and the valley of the Rio de la Plata, are already worth more than they are with any of the countries of Europe, except Great Britain and France.

At this instant, the "Levee" at Para affords foreign commerce enough from the valley of the Amazon to give annual freight to a fleet of fifty sail. But this is nothing to what it will do when the stimulants of civilization, agriculture, navigation and commerce shall be applied to that prodigious wilderness of wealth.

Of more than twice the area of the Mississippi valley, that of the Amazon is much more bountiful. There the labor of one day in seven is enough to crown the board of the husbandman with plenty.

The vegetable kingdom sits enthroned there in surpassing grandeur, sublimity and power. Its energies are in ceaseless display, its forces in perpetual activity, vigor and health. There, is there no falling of the leaf; no season of repose in the vegetable economy: and consequently, no period for the decay of vegetation; no time for the development of noxious gases and pestilential miasmata. As soon as these are evolved from one plant, they are absorbed by another in the perpetual summer; the result is, a climate of great salubrity.

The display there of the vegetable force is terrific. Here with us, as we travel along the sea-shore, we see the vegetation standing back and separated from the water by the battle-ground between the waves and the land. Strewed with debris, and covered with fragments thrown up from the bottom of the sea, or uprooted from the base of the hills, this field of battle with us is a sandy, barren waste. In it, no subject of the vegetable kingdom is permitted to take root; and not a member of the whole animal family is able to gather even the most scanty means of subsistence from it. The scene of the most perfect desolation to be found on the face of our planet, is the field of strife on our shores between the waves and the winds and the dry land.

In Amazonia, the mineral gives place to the vegetable kingdom in the conflict, and a new combatant enters the field. The forces of the vegetable kingdom there, march down for the fight to the very water's edge. A storm arises; the waves come and beat back the vegetation, bearing it down and heaping upon it piles of sand and shells cast up from the depths below. In a few days the tremendous power of vegetation recovers, and is seen marching down over the sand banks and piles of fragments, and planting its foot again upon the water, in the water and under the water, and pushing out its advance-posts in lines of green far into the sea.

The lilies of the valley attain such gigantic vigor and proportions that a single leaf will float a man.

If there be such a display of vegetable growth in the wild state, of what is such a climate not susceptible when it shall be assisted by the arts of cultivation?

Peruvian bark—cascarilla and cinchona, as the Spaniards call it—is found in the valley of the Amazon, and nowhere else. It is cut from the banks of one of its navigable tributaries, packed upon the backs of Peruvian sheep—carried up beyond the clouds into the regions of perpetual snow on mountain tops, and transported beyond the Andes, 600 miles to the Pacific Ocean; arrived there, the ceroon, which, at the place of production in the great Amazon basin, was worth only a few pence, now commands from eighty to one hundred dollars.

Thus the world is supplied, over the mountains and around Cape Horn by sheep, asses and ships, with that drug. Were steam once to force its way up the Amazon, this drug would come down the river and pass by our doors on its way to market. That trade, in its present state, is worth upwards of half a million annually. The use of quinine is increasing, and the demand therefore for the bark must continue to increase.

On the steppes of the Andes, where they serve as a water-shed for the Amazon, are to be found flocks numbering thousands of sheep covered with fleeces of the finest and the rarest wool; and yet it is scarcely worth the shearing, so great are the difficulties of getting it to market. Nevertheless, were it possible to place this wool on a raft that would keep the current, and were it to be thus launched on the stream where the flocks go to drink, it would drift down the Amazon; and being delivered by it to the winds and currents of the sea, it might, without other guide, be found in the gulf stream off Cape Hatteras; so direct is the natural route even from the remote corners of that valley to this country.

Such are the physical conditions which invite the South to the study of the commercial resources, the advantages of trade, and the interests to her navigation in that quarter.

In the valley of the Amazon are mines of silver and gold of immense yield. There, too, are found and wrought the great quicksilver mines of the world; and there, too, situated far down towards the Atlantic in that valley are the mines of diamonds, of gems and precious stones, which have dazzled princes, lent splendor to the crowned heads of Europe, and added brilliancy to the pageants of all people.

There is now on the statute books of Portugal a royal ordinance forbidding any of

the productions of India to be cultivated in Brazil. This was when Brazil was Portuguese; and when Portugal was apprehensive lest the spices of Brazil would injure her eastern commerce and possessions.

The cinnamon of Amazonia is superior to that of Ceylon; its gums and ornamental woods are said to be of surpassing beauty, variety, excellence and value.

Men of science who have studied the physical conditions of Amazonia and India, and who have compared the climatology of the two regions, are of opinion, that in this magnificent wilderness of America are to be found both soil and climate suitable for the production of every spice, gum, resin and drug that is grown in the East.

The spirit which moved men in the days of knight-errantry, which drove them in the time of the crusades, and which, at a later period, carried them across the seas, and conducted them to the New World in search of adventure and geographical discovery, is still as rife in this country as ever it was in the world. But it has assumed a new character: it has doffed the tinsel array of former times, and laid aside the pomp and circumstance with which it was wont to influence the imaginations of men, to dazzle their minds, bewilder their judgments and beguile their energies. Guided now by the lights of knowledge and improvement, which ornament the age in which we live, this active, restless and misdirected spirit of former times has been tamed down. Eminently utilitarian in its character, it now goes abroad with commerce, and seeks adventures in the fields of honest industry—achievements in the paths of peace.

It is this spirit, which, if once permitted upon the wings of free navigation to enter the grand river basins of South America, will cause the wilderness there to blossom, and the whole land to smile under the tillage and the worship of a peaceful and happy population.

Therefore, let the South look to the South for trade and commerce; let her, in the peaceful Christian spirit of the day, cultivate with Brazil the relations of friends and neighbors; let her foster, by all means in her power, liberal commercial relations with a region which has such vast possessions, such countless treasures, such infinite resources, to make valuable its future commerce—rich and great the people who are to enjoy it.

There is no colonizer, civilizer, nor Christianizer like commerce.

Encourage commerce, therefore, with the valley of the Amazon, and you encourage its settlement, and its cultivation, and the development of its resources. And in doing this you keep bright also that precious chain

with golden links, which binds nations together in peace and friendship.

In the whole domain of future commerce, the greatest boon for the people of the United States is the settlement of Amazonia. We are bound to enjoy largely of the commerce to which such settlement is to give rise.

The people who go there will, for many generations yet to come, be dependent upon the United States for their manufactures, for articles of fancy and luxury, and for all varieties of merchandise, save and except those articles—and they are in their unelaborated state—which they may dig from the mine, or gather from the field or the forest. The climate there is unfavorable for the workshop, and the soil will readily yield to the husbandman the richest of harvests wherewith, by exchange and barter, all his wants may be satisfied.

What would any of the maritime nations not give for a monopoly of the commerce of the valley of the Mississippi as it now is—and what is that commerce now, compared to what that of the valley of the Amazon must be?

Settlements there, will transfer the productions of India and place them in Amazonia at our feet; so that the ships of all nations that may flock there to buy and carry them away, will have to pass by our gates.

Surely an enterprise that has for its future the possibility of such results—an enterprise which has for its object the lifting up of the Indies and the setting of them down within a week, by steam, at our very doors—surely an enterprise which looks to such a revolution in the commerce of the world—to such a carrying trade, and to such a monopoly of it to ourselves—cannot fail to find favor with every true-hearted American, whether he come from the North or the South, the East or the West.

The beginning, it may be said, is too small for the end—the means proposed not adequate to the result. Not so: the fall of an apple was the beginning of a science. Have we not seen how, by dipping a thermometer in the sea, our Atlantic coast, as it regards the course of navigation and trade with Europe, was turned end for end? And how, by Jeremiah Thompson's packet ship of 300 tons, and the enterprise of New-York, the Mississippi valley has been turned upside down, and the commercial mouth of the St. Lawrence River lifted up, and brought by canal and railway down to Sandy Hook? We do not mean to commit ourselves to the position that a line of steamers from Norfolk to Para would be self-sustaining *now*. We have been speaking of the future, and maintaining that the establishment of the line *now* would give the South many and great pro-

spective advantages that the South, perhaps, never would enjoy to the full extent, unless she commence now, and prepare foundations suitable for that magnificent commercial structure, which is certainly at some day to arise out of that valley.

To encourage the enterprise now, there is the carrying of the Brazilian and the Buenos Ayrean mails. The correspondence between the United States, Para, Rio, Montevideo, and the Argentine Republic, is extensive; and the revenue to be derived for the transportation of these mails would, with or without previous contract, go far towards supporting the line; and the sources of all its business, freight, passengers, and mail matter, would rapidly increase.

So far, geographical position only is in favor of the South. The facts we have stated, the arguments we have used, commend the enterprise as strongly to the North as to the South; and if the South do not make haste soon to take it up and embark in it, we may rest assured the North will not be slow. The contract for carrying the mails would protect those who may be first to embark in this field from competition for a few years, which, while the company is getting a foothold, is no small consideration.

It is useless, because the attempt would be vain, to draw a picture of what commerce and navigation with the Amazon, or on the Amazon, or up the Amazon, or down the Amazon, would do in a few years; or how the silver from the mines of Potosi and Pasco, the gold of Peru and Bolivia, and copper and tin, would all flow down the Amazon to the Atlantic, instead of crossing the Cordilleras to the Pacific. We are now informed of gold diggings, placers and washings, on the eastern slopes of the Andes, that would vie with those of California. They are in the Indian country of Amazonia; but the energy and enterprise to fight, dig and wash, are not to be found among the people there. This, however, we regard as among the least valuable of the immense resources of that valley. Subdued to commerce, it would be a boon indeed.

There is, moreover, another point of view in which the valley of the Amazon, with its magnificent and interesting future, presents itself to the American mind.

That view we will hastily sketch, presenting only the main features of it.

That valley is a slave country. The European and the Indian have been contending with its forests for 300 years, and they have made no impression. If ever the vegetation there be subdued and brought under—if ever the soil be reclaimed from the forest, the reptile, and the wild beast, and subjected to the plow and the hoe, it must be done by the African, with the American axe in his hand. It is the land of parrots and monkeys. Wherever they are found, there the African

delights to dwell; and he alone is equal to the task which man has to accomplish with the axe in the valley of the Amazon.

At the North, the spirit of emancipation has been pressing the black man down to the South. He is now confined almost upon the waters of the gulf. In the South, the same spirit has pressed him up to the North, and assigned to him the valley of the Amazon as his last resting-place upon this continent. When that valley is subdued and peopled up, it is not for us to divine what will happen—it is too far away in the midst of the future for our ken. Sufficient is it for us to know, that even then God, in his own wise providence, will order the destiny of the black and the white race to be fulfilled, whatever it may be.

Therefore, humanly speaking, and humanly perceiving, the settlement of the valley of the Amazon, its relations to this country, its bearings upon our future commerce and institutions, appear to be so close, so intimate, and withal so potential, that the destiny of the United States seems to be closely connected with, wrapped up in, and concealed by this question.

Storms will come at sea, and crises will arise on the land; but no mariner or statesman ever escaped the one or avoided the other by failing to prepare for them. When the ship is too much pressed—knowing that she may be—the prudent seaman has all, ready provided and at hand, the means of relieving her. In doing this, he considers the safety of the vessel, of the cargo, and of all on board. We propose to follow his example with regard to the ship of state.

The institution of slavery, as it now exists in this country, fills the minds of its statesmen with anxious solicitude. What is to become of it? If abolished, how are so many people to be got rid of? If retained, how are they to be controlled? In short, when they have increased and multiplied according to the capacity of the states to hold them, what is to be done with them, whether they be bond or free?

The "slave states," so called, have the black lines drawn about them. There will soon be no more Mississippi lands to clear, no more cotton fields to subdue, and, unless some means be devised of getting rid of the negro increase, the time must come—and sooner or later it will come—when there will be an excess in these states of black people. This excess will be brought about by the operation of two causes—natural increase of the blacks on one hand, and emigration of the whites on the other. The slaves may go from one slave state to another, but they cannot go out of the slave territory. Therefore, in the slave territory must they remain obedient to the command, "increase and multiply." As their numbers spread, and as their labor becomes less and less valuable—as in

process of time it seems likely to do—owners will sell or leave their negroes behind, and emigrate to other parts—thus, by their absence, increasing the proportion of blacks to whites.

The New-England States and the Middle States did not emancipate their slaves; they banished them. They passed their post-natal and prospective laws of emancipation, it is

true; but they did not command the master to let the slave go free. Before the time came round for the slave to go free, he had, in most cases, been taken off to the South, and sold there; so that the so-called emancipation at the North was simply a transfer to the South of the slaves of the North—an act of banishment; nothing more.

Statement from the Census Tables of the Free Colored Persons in the New-England and in the Southern States:

	1790.	1800.	1810.	1820.	1830.	1840.
New-England	13,156	17,317	19,488	20,756	21,331	22,634
Southern States	27,983	51,923	91,402	115,373	156,633	183,766
<i>Per cent. of increase.</i>						
New-England	3.1	1.2	0.6	0.3	0.6	
Southern States	8.5	7.6	2.3	3.5	1.8	

Besides their natural increase, the free blacks of New-England receive large accessions to their numbers from the free colored emigrants and runaway slaves from the South. It is well known that the tide of emigration of the free men of color flows North;—there never has been a reflux of it towards the South.

Thus, what is taken from the South by emigration is added to the North; and therefore, in a comparison of the free colored statistics between the two sections, the whole amount of emigration from the South appears as a double difference. It is subtractive on one side of the equation, and additive on the other.

Bearing these statements in mind, it appears from the above-quoted statistics, that comparatively but few slaves have ever been emancipated at the North; that as between the New-England and the southern states, the southern have been the principal scene of emancipation; that notwithstanding the emigration from the South, the South has, within the fifty years between 1790 and 1840, doubled the number of her free blacks nearly six times; whereas the New-England states have not, in the same interval, doubled theirs once; and that, moreover, during the period of prospective and post-natal emancipation at the North, ten slaves received their freedom at the South to one at the North.*

The decrease of emancipation at the South, between the first and the last decade of the above table—the falling off from 85 to 18 per cent. in the sources both of emancipation and

natural multiplication taken together—is decisive as to the practical increase at the South of the difficulties in the way of setting the slaves free. In their own mute style, these figures proclaim with unutterable eloquence the injury and the wrong which fanatics, styling themselves the friends of the black man, have inflicted upon his race. With a free colored population of 27,983 in 1790, the South in the next ten years, by natural increase and emancipation, swelled this class by 23,940. The natural increase due the basis of 1830, (156,633,) is nearly six times that due the basis of 1790 (27,983.) It ought to be, certainly;—yet what do we see in the above figures? Why, that with the large basis of 1830, the decennial increase is but 27,133—only 3,193 more from 156,000 in 1830, than from 27,000 in 1790! Why, the free colored race must have fallen off wonderfully in its powers to “increase and multiply,” or emancipation must have become much less in vogue among southern people now than formerly.

Not only do these figures and facts, but the statute-books also, show that the practical difficulties of emancipation have been greatly increased at the South. We see that from 1790, the increase of the free colored population at the South has fallen off from the average annual rate of 8.5 to less than 2 per cent. More properly speaking, the ratio in which it has fallen off is as 8.5 to 1.8.

The South could not, if she would, banish her slaves, and then tell the world that that is emancipation, for she has no place of banishment to send them to.

In the spirit of truth and candor, we do not think we venture too far when we assert it as a probability, that neither New-England nor the middle states would have passed when they did the emancipation acts which sent their slaves into banishment, if they had not had the South or some other place to send them off to.

Now, suppose that Maryland and Virginia, Kentucky, Tennessee, and Missouri, should

* In drawing this comparison, allowance should be made for the emigration of free blacks from New-England to Canada, and the North Western states, and also for the circumstances that after the free laws went into effect in the New-England states, there remained no more slaves to emancipate. But making allowance for all this, and arguing from the supposition that the natural increase of free persons of color is the same North as South, we shall still be left with the conclusion that the South has emancipated many more slaves than the North ever did, considering the matter rateably.

wish to pass post-natal free laws, or a law of the so-called emancipation, can it be imagined that the remaining slave states would permit the slaves from those states to be crowded down upon them—to be brought there and sold, as those of the New-England states were when they were emancipated.

We know the free states would not permit the liberated slaves to come over, in any considerable numbers, into their borders. The new constitution of Indiana, so far as she is concerned, is conclusive upon that point.

It is not to be supposed that the states in question will ever emancipate, if the liberated slaves are to stay where they are. Emancipation and citizenship both, to the slaves of the southern states, is rather too much to expect from any one of them.

There are in the United States at this time, about three millions of slaves owned by less than three millions of people. We shall not use too large a figure if we set down the average value of each slave at \$400, or in the aggregate at twelve hundred millions of dollars. Total emancipation—it makes no odds how gradual—even if commenced now, would cost these three millions of American citizens—or, in a large sense, the people of the fifteen slave states, 1,200 millions of dollars. Did ever any people incur such a tax? History affords no example of any. The slave population increases at the rate of $2\frac{1}{2}$ per cent. per annum. Therefore, unless an outlet be found for the slave population—as slaves—the difficulties of emancipation in these United States, so far from decreasing with time, will become greater and greater, and that, too, they are doing at a tremendous rate, and with a frightful ratio, as year after year rolls round.

The fact must be obvious to the far-reaching minds of our statesmen, that unless some means of relief be devised, some channel afforded, by which the South can, when the time comes, get rid of the excess of her slave population, she will be ultimately found with regard to this institution, in the predicament of the man with the wolf by the ears—too dangerous to hold on any longer, and equally dangerous to let go.

To our mind, the event is as certain to happen as any event is which depends on the contingencies of the future, viz.: that unless means be devised for gradually relieving the slave states from the undue pressure of this class upon them—unless some way be opened by which they may be rid of their surplus black population—the time will come—it may not be in the next nor in the succeeding generation—but, sooner or later, come it will, and come it must—when the two races will join in the death struggle for the mastery.

The valley of the Amazon is the way; in this view, it is the safety valve of the Union. It is slave territory and a wilderness. One

among the many results of this line of steamers, is the entire suppression of the African slave trade with Brazil, by a substitution therefor of a slave emigration from the United States. At least so it appears to us.

The negroes from the Middle* and the New-England states, who, under the emancipation laws of those states, were forced into the markets of Virginia and other southern states, did not thereby become more of slaves than they were before. There was a transfer of the place of servitude—that was all. Not a slave the more was made. But he that was taken from the north to the south remained in the country. Suppose he had been sent to South America instead of to South Carolina, it would have still been the same to him; but how different to the country! There would in that case have been a transfer of the place of servitude, as before; but, according to the anti-slavery tenets of fanaticism, a curse the less would have remained upon the country.

This subject opens to the imagination a vista; in it the valley of the Amazon is seen as the safety-valve of the South, and this line of steamers as a strand, at least, in the cord which is to lift that valve whenever the pressure of this institution, be that when it may, shall become too powerful upon the machinery of our great ship of state.

As in the breaking away of the storm, a streak of clear sky is welcomed by the mariner whose ship has been endangered by the elements, so, this Amazonian vista is to us. It is the first and the only streak of light, to our mind's eye, that the future throws upon the final question of slavery in this country.

Every steamship has her safety-valve; but every steamship is not obliged to use it always. It is there in case of necessity. So with the valley of the Amazon: we need not go there ourselves, nor send our slaves there immediately; but it is well to have the ability to go or to send, in case it may become expedient so to do.

This line of steamers, by the commercial ties which it will establish, by the business relations which it will beget, by the frequent intercourse which it will bring about between the valley of the Amazon and the southern states, will accomplish all these great results, and more, too.

The subject is immense—its magnitude oppresses us. We commend it to the serious consideration of our merchants and statesmen; and in so doing, we venture, though with diffidence, to ask the question: Will not one or more of the states most concerned in the successful issue of the enterprise, give it encouragement?—*M. F. Mawry.*

* Calling Middle States, New-York, New-Jersey, and Pennsylvania, only.

SOUTHERN COMMERCE—ITS EXTENSION BY SEA.—Most of the railroads run across the ridges, and go from valley to valley. In one sense, our navigable water-courses may be considered as inclined planes, and the river craft as gravity cars, which, taking advantage of a physical principle, convey the produce to market at a cheap rate along the natural descents of the country. Hence the very striking feature in our internal improvement system: the railroads and navigable rivers cross at right angles. This is the rule. The Hudson river railroad, and some of those which are either in contemplation or in process of actual construction in the south are the exceptions which make that rule general.

Can the steam-car on the land successfully compete in the transportation of merchandise with the gravity car on the water?

This is one of the questions which will no doubt command the deliberations of the convention. Its members will be far better able to judge than I am, whether the condition of your part of the country be such that railways may run along parallel with your magnificent water courses, and live.

But in considering it, it should not be forgotten that this is an age of advancement and improvement. It was but a few years ago only that it was said, and the world believed, that the power of steam could not compete with the free winds of heaven in propelling vessels to and fro across the ocean. And I am not prepared to say that railways may not compete with the Mississippi in the transportation of merchandise, as well as of travellers.

Times have greatly changed: you all can recollect, gentlemen, when the price of cotton depended upon which way the wind blew. If easterly winds prevailed so as to prevent the arrival of the cotton fleet in Liverpool, up went the staple. Some swift-footed packet was dispatched over with the intelligence, and he who could outstride the mail, and reach your markets first, made his fortune. But steam and the telegraph have done away with this. There is no more room for that sort of enterprise, as it used to be called. New-York and New-Orleans, with the forked tongue of the lightning, now talk daily together about the price of cotton and everything else; and there is no more chance for the merchant to display his enterprise by getting control of private and peculiar sources of information. All information now as to the state of markets, is common.

Salem once had command of the tea-trade. Her merchants, ascertaining that the stocks on hand were small, and the sources of immediate supply scanty, would club together and buy up, for a speculation, all the tea in the country. But now, a cargo of tea arrives—the fact is known. The telegraph

passes the word fore and aft through every state, and asks who wants?

If Salem merchants should demand one farthing more than those of New-York are willing to take, the telegraph would give the order to New-York. And so with every other article known to commerce.

Southern and western merchants now, by reason of steam and lightning, can stay at home, send out orders, and get from France and England their supplies much sooner than a few years ago they could get them from Baltimore, New-York or Philadelphia, after having gone there to order them. The consequence is, that southern and western merchants do this; and there are now in that section of the country, houses engaged in importing from abroad.

The fact is, the producer and consumer are much nearer together than they used to be; consequently, the factor does not keep the large stocks of former times on hand. He draws from the sources of supply just in proportion as the channels of demand are glutted or free.

The chances of speculation are small, and profits are brought down to the smallest figure.

All these circumstances have impressed themselves upon the business of the country, imparted new features to it, and made necessary important changes in the mode and means of conducting it.

These changes, and the causes of them, have powerful bearings upon the subjects which the convention is called to take into consideration.

They, and the operations of the warehousing system, have caused men of business to establish in St. Louis, Cincinnati, and Louisville, &c., foreign importing houses. The duties collected in these three cities for the current year, amount to nearly half a million, and the value of the foreign merchandize imported direct to, upward of a million and a half. These importers and the warehousing system are recovering back to the South a portion of the direct trade. The duties collected at Charleston this year are greater than they have ever been; and Charleston imports largely of Havana cigars for New-York.

It is true that the quantity of produce coming to New-Orleans in search of a market, has fallen off; and, consequently, the number of vessels arriving and departing, has decreased. This is what has alarmed, and justly alarmed, the people of New-Orleans. The cry is, "What's the matter? Here, there is decline, where there ought to be robust, vigorous health; depletion, where we ought to look for habits plethoric and full. What is it that has brought our city to this state of decline?" It appears to me that a satisfactory answer to this question is

a necessary preliminary to the treatment of the case—to the application of remedies.

It is in the domestic trade, I apprehend, that the great falling off has taken place; or rather, I should say, it is in the export trade by sea, whether domestic or foreign, and not in the imports by sea, where the decline is; and if a decline in the quantity of produce going out of the mouth of the Mississippi has taken place, why, of course,

a decline in the quantity delivered at New-Orleans from the upper country has preceded.

To satisfy myself as to the correctness of these views with regard to the import trade of the Mississippi River, I called upon the Commissioner of Customs, who has obligingly furnished me with the following tabular statement of the gross revenue collected at New-Orleans, &c., for the last five years:

GOVERNMENT RECEIPTS FOR CUSTOMS.

	New-Orleans	Cincinnati	St Louis	Louisville
1847.....	\$1,621,357 08.....	\$31,793 04.....	\$52,751 69.....	\$8,752 98
1848.....	1,714,880 43.....	56,874 79.....	60,618 38.....	8,648 81
1849.....	1,594,742 27.....	41,859 65.....	54,334 04.....	26,663 26
1850.....	1,924,698 41.....	133,838 76.....	122,914 91.....	59,901 00
1851.....	2,296,636 08.....	149,167 15.....	211,526 19.....	64,795 37

"The revenue collected at Cincinnati, St. Louis, and Louisville, and other ports similarly situated, was derived from importations of foreign merchandise at New-Orleans.

"The importations of coffee (free) at New-Orleans, do not appear in this statement.

"The returns since 1st July, 1851, compare favorably with last year up to the present date.

"Dec. 15th, 1851. C. W. R."

There are other places in the valley where duties are collected also; but this table shows a regular, steady, and business-like increase in the direct importations of foreign merchandise into the Mississippi valley by way of New-Orleans. The duties upon it have increased during the five years ending with the 30th June last, in round numbers, from \$1,715,000 to \$2,722,000, or at the average rate of nearly 12 per cent. per annum.

Now, the reason that the export sea-trade of New-Orleans has decreased, and its foreign trade increased, if traced back to first principles, will be found depending for an explanation upon steam and lightning, upon the improvements of navigation and ship-building, and upon the obstructions to navigation at the mouth of the Mississippi River.

In consequence of the first of these, a punctuality and a certainty have been given to commercial transactions, which, as before stated, have broken up almost entirely those transactions which were formerly known as "commercial speculations." Punctuality in filling orders and delivering goods where they are required, is now a vital principle to wholesome commerce. Dealers and factors are brought down to the smallest margin for commissions and profits. Merchants will tell you that profits now consist in parings made by close cutting: a little here, and a little there. Therefore, to save the handling of the produce of the Mississippi valley, once on its way to market, is profits.

Hence, all that produce which used to be shipped from New-Orleans to New-York, and then re-shipped thence for European markets, and all that foreign merchandise which used to be imported into New-York,

and sent thence to New-Orleans, is beginning to go and come direct to New-Orleans, in order to save the transhipment. Many of the agencies that used to be employed between the producer and consumer, have been stricken down by the lightning; and the tendency of steam and the telegraph is to bring the producer and consumer more and more into direct intercourse.

In evidence of this, we may point to the importing houses that are springing up in the cities of the valley. In St. Louis, for example: there, the wholesale merchants do not, as formerly, buy of the Eastern importer, and, of course, pay him his fees, commissions and profits; but they are beginning now to go direct to the foreign producer, as the eastern importer does, and order direct; thus saving the expenses of an agency, or the part of one at least.

The enterprise of Illinois has created another mouth to the Mississippi, and placed it in Lake Michigan. Much of the produce which formerly touched at New-Orleans on its way to market, now goes through that canal; and for certain articles, its influence is felt even on the plantations in the state of Louisiana; for some articles, even from there, are turning about and flowing up stream: sugar is one, molasses another.

Before this canal was opened, the sugar of Louisiana, in order to reach the consumer in the lake country, had to go down to New-Orleans, then round by sea to New-York, then up to the lakes, and so across by water, boxing the compass to get to Chicago. Now that canal is beginning to supply that whole region of country with sugar and molasses, which it attracts up the Mississippi.

This lessens the receipts of freight at New-Orleans; but it benefits both producer and consumer; and it is not, I apprehend, any part of the objects of the convention to interfere with a business so legitimate and proper as this is, and which all the railways in the world can no more bring back than they can stop up that canal. It is the object of the

convention to assist the sugar and the molasses to get to Chicago by railway, if sugar and molasses shall prefer that, to water carriage.

We buy *Virginia* hams here in Washington now that are cured in *Terre Haute*, on the *Wabash*. By the old and natural roads to market that could not be; the route of the ham would have been down to New-Orleans, thence by ship to New-York, and thence back by a packet into the capes of *Virginia*, and so up the *Potomac* to Washington—a two or three months' voyage, during which, in consequence of the climates through it must have passed, and the stowage it must encounter, it probably would have *come to life* again. At any rate, it would have been *alive* by the time it reached this place.

Now, in consequence of these rail-roads, which have been tapping the *Mississippi* valley, the "*Westphalias*" of *Terre Haute* can reach here in a week by paying $\frac{1}{4}$ cent a lb. They come up the *Ohio*, instead of going down; and across by rail-road, instead of around by water.

The commercial history of this ham is that of much produce in the valley of the Upper *Mississippi*. Here, therefore, in these tapping railways, is to be found another of the silent causes which have lessened the deliveries of produce at New-Orleans.

To add to the deleterious effects upon New-Orleans of this tapping of the *Mississippi* River at the other end of its valley, and on the eastern side, are the bars at the *Balize*, and the influence which the depth of water there exercises—the baneful influence which the bar there exercises upon the models and the sailing qualities, and, in fact, upon the whole economy of the ships that are built for the New-Orleans trade. And it is bad for the owners to be compelled to build ships that will not answer equally well for all trades. The best carriers, therefore, cannot come to New-Orleans. If they could, New-Orleans would soon find her merchants shipping the produce that lines the levee direct to its foreign port of destination. As it is, the ingenuity of ship-builders has contrived models for cotton ships.

These are immense carriers, and can take cotton to England at rates which a few years ago would have been considered ruinous to owners.

These vessels being once loaded and over the bar into blue water, will take cotton to Liverpool nearly as cheap as they will to New-York or Boston. The voyage is short, and perhaps the chances for a return cargo are better in Liverpool; therefore, they go direct.

In these facts and circumstances, and in this view of them, we can see the operation of causes which tend to increase the foreign export trade on one hand, and to decrease it

on the other. Those cotton ships are not good provision and assorted-cargo carriers. The clippers are for that. The new models beat steam. One of them (the *Flying Cloud*) has been known to sail 430 statute miles in one day, and upwards of 1,100 miles in three consecutive days. These ships cannot come to New-Orleans. The bar will not admit them; and one of them can go to California and return while a "cotton droger" is getting around Cape Horn.

Besides, the winds are such, that a vessel, bound from New-Orleans to Brazil or California, has to go out of the gulf into the gulf stream, and then steer northwardly, till she reaches the parallel of 35° or 40° , so that it is not greatly out of her way to touch at New-York. Hence, most of the trade with California in produce of the *Mississippi* valley is carried on by the way of New-York, on account of the bar at the mouth of the *Mississippi*.

In all these circumstances are to be found lamps for our feet, and lights for our eyes, as we attempt to devise the ways by which enterprise and energy may restore to New-Orleans all the advantages which their absence from her high places has suffered to be taken away from her, or to be withheld, because never enjoyed.

The objects of the convention, as set forth in the committee's circular of November 4th, 1851, "are, as far as possible, to bring about a concentration and unity of effort in all these states, in the extension of their rail-road systems, and in bringing into more active connection their population and their industry."

But it seems to be the wish of the committee that I should confine my attention to "the extension of southern and western commerce, the home and foreign trade, &c." Therefore, being invited out to sea, I shall let the rail-roads, which it is the special object of the convention to encourage, alone. I take my departure from the premises above stated, and treat of extending the commerce of the *Mississippi* valley, &c., by sea.

The apparent decline in the business of New-Orleans is, as I have already intimated, due to the effects of the telegraph and rail-road, and to the improvements in steam, ship-building, and navigation. This is the root of the matter. What, then, are the steps which the South and West ought to take—what are the measures which they ought to adopt, in order to insure to them that degree of commercial wealth and prosperity, which their resources and their geographical position entitle them to expect?

The answer to this question lies under several heads, and the principal of them are these:

1st—A liberal policy on the part of New-Orleans, touching fees of various kinds, to

which the produce that comes there shall be subjected.

2d—Embankments, to confine the Mississippi River in its channel.

3d—To deepen the water on one of the bars in the passes of the river.

4th—The establishment of lines of sea-steamer.

5th—Attention to the mineral resources of our region of country, and a free use of its manufacturing facilities.

6th—The opening of commercial highways across the Isthmus.

7th—The establishment, in the Mississippi valley, of a navy yard, depot, and workshops, which in war shall have strength, capacity, and resources enough to give us command of the Gulf of Mexico, and control of the commerce passing through it.

8th—The free navigation of the Amazon River, and the building up there of those business relations and friendly ties, which hold nations together in the bonds of peace and friendship.

These are the measures—the means are simple: they consist in a firm reliance upon our own abilities, with a determination to perform our part in the matter, and to require the government to do its part as well.

Such are the questions which I propose to consider, except in so far as the proposed rail-roads may be involved in the case. That, as already remarked, I leave to wiser heads.

If the people of the South and West will be but true to themselves—if they will put their shoulders to the wheel, and, as one man, appear, in the persons of their representatives here, in the halls of Congress, and insist upon fair, even-handed justice in the appropriations for public works, that course of legislation will follow, which long ago ought to have been adopted with regard to the Mississippi River, and kindred subjects.

I do not present these measures, or any of them, as substitutes or rivals to the proposed system of railways; nor do I hold them up as measures which will, ought, or should divert attention from the railways. There will be ability enough in the Convention to treat all of these measures, and to present each one to the public in its true bearings upon the common weal; and there is energy with enterprise enough in that region to carry them all on together.

II. The drowned lands in the Mississippi valley have been ceded to the states in which they lie, upon condition that those states, in reclaiming them, will confine the river within its banks.

The reclamation of these lands would improve the climate of a vast region of country, and make it much more salubrious; it would add vastly to the wealth of those states by giving value to the lands, and greatly increase their commercial resources by bringing immense regions of these vacant lands under

cultivation; and it would also vastly improve the navigation of the river.

An object of so much importance to the health and prosperity of so many people, in so many states, is certainly worth looking after; and the work, when done, should be done in the most thorough and effective manner.

Therefore let us pray Congress for the appointment of an engineer who shall plan the work; and for the enactment of a statute requiring the states to have the work done according to that plan.

This work is to last for all time. Suppose, therefore, merely for the sake of illustration, that one of the states above Louisiana should be unfortunate in the adoption of a plan; that after having let the work, accepted it, and parted with the lands, experience should prove the plan to be bad or the work to be useless. Louisiana then is overflowed in spite of herself; and her works, which we will suppose were really sufficient, are thus in danger of being rendered of no avail.

The prosperity of the valley is to be greatly affected by this work of embankment, drainage, and reclamation; and, therefore, the best talents that the country affords should be employed to direct it.

III. More than fourteen feet water cannot now be counted upon in crossing any of the bars at the Balize. Vessels drawing sixteen feet are sometimes dragged over them through the mud.

As for the ability of New-Orleans, or the people who send their produce there on its way to market, to avail themselves of the improvement in ship-building, as long as the passes of the river are obstructed by bars, it is out of the question. The sailing qualities of ships are according to their models; their models are regulated by their draught; and their draught is controlled by the depth of water on the bar. Therefore, the people of the great valley of the West, the men whose labors and whose enterprise have put the heart of the country where it is, and who supply all those great staples out of which the business of commerce raises revenue for the government—therefore, I say, those people must be doomed to second and third rate ships to do business for them upon the great waters, because that government will not do its duty. Had the people of the Mississippi valley been true to themselves, no representative of theirs would have ever been found recording his vote more than once against an appropriation for keeping the mouth of that river free and open for ships of the largest class.

A year or two ago, the Secretary of the Navy was kind enough to yield to my solicitations, and to direct a series of observations to be conducted upon the habits of the Mississippi River, at Memphis. This series commenced 1st March, 1850, and was continued

daily for a year, by Robert A. Marr, Passed Mid. U. S. Navy; a most intelligent officer, and a patient and indefatigable observer.

His attention was directed, among other things, to the volume of water, as well as the quantity of sediment, borne down the river by Memphis.

His observations were most carefully made. According to them, and upon the supposition that the year gave a fair average, there go by Memphis daily, 471,550 cubic yards of sand and mud, or silt, as it is called.

Because the river runs faster at Memphis than it does at and below New-Orleans, and because, as the current slackens, the silt is precipitated, we are, I presume, correct in the inference, that the waters of the Mississippi River are more heavily laden with silt as they pass Memphis, than they are when they reach the Balize.

Now we know very well, and we derive the knowledge from many years of observation, that the Mississippi River does not raise its bottom, below New-Orleans, at the rate of more than a few inches in a year, if at the rate of an inch.

To cross the bar at either of the passes, a vessel has only to sail a few hundred yards. Suppose the bar were to rise up at the rate of one or two feet, instead of a few inches in the year; the channel-way across the bar for ships need not be more than 300 or 400 feet wide; and how much dredging would it take to excavate annually a layer of mud one or two feet deep, from a channel-way a quarter of a mile long, by 300 or 400 feet wide?

This is the matter about which the government has, for the last twenty years, been having examinations made. Examinations will never satisfy. Let us make the experiment.*

I have no doubt whatever as to the practicability of deepening one or more of the bars of the mouth of the Mississippi, and by dredging, of keeping any required depth of water there. A gale might now and then interfere with it. But it is a case in which experiment, and experiment alone, can properly decide. It is worth the trial. I hope, therefore, that the delegates to the Convention, and the people whom they represent, will take the matter in hand, and not rest till Congress causes the experiment of deepening one of the bars at the mouth of the Mississippi to be made. This is no New-Orleans question: it is not confined to the valley, nor to the people of the South and West. It is a great national concern. The people of Missouri, Iowa, and Tennessee, of Maine, Massachusetts and Texas, are as much interested in this matter as are those of Louisiana.

IV. Steamships are the railways of the sea.

Notwithstanding there be fine navigable

streams and good turnpike roads leading into a city, it is found, by ample experience, that a few rail-roads, well placed and brought into the same city, will vastly increase its business, and, hence, its prosperity.

What is singular about these railways is, that they do not interfere with the turnpikes nor the river trade. They create a business of their own.

So it is with lines of steamships. They do not interfere with the coasters and the sailing packets, which answer to the turnpike and river craft of the interior. But they also create a business of their own. Look what the European steamers have done for New-York and Boston. So far from interfering with the business under canvas, from those cities, they have stimulated it, and made it more active. Ever since steamers began to ply between New-York and Liverpool, the New-York packet ships have been increasing both in number and size. And it is as idle for us of the South and West to repose upon the great commercial advantages which nature has vouchsafed to New-Orleans, or that region of country, by reason of her own geographical position, and the geographical position of the Gulf of Mexico—it is as idle, I say, for the people to rest quiet, and expect the proper lines of steamers to come to them, as it has been for them to rest quiet upon the advantages which the Mississippi River gave them, while around them was enterprise and activity. Other cities and sections tapped the Mississippi valley, and sent rail-roads there for their own benefit and advantage. They may also, from the same motives, send their steamships to ply about New-Orleans. The people of New-Orleans have waked up to the reality of their position in one of those respects. The watchful are never caught asleep twice; and it is time they were beginning to be up and doing in the other.

VI. As soon as there is a commercial thoroughfare across the Isthmus, which will unload, handle, and transport the breadstuffs with the other heavy produce of the Mississippi valley, across the Isthmus, and put it on board ships in the Pacific for less than it costs to get it as far as Cape Horn, on the way, that moment is the Gulf of Mexico raised to the summit level of this world's commerce.

All nations will then be down hill from the Gulf; and the people who inhabit the great valley of the West, and who pass its produce down through the Mississippi River into the Gulf, and deliver it there to the winds of heaven, or the currents of the sea, may then take their choice, and go with it by down-stream or fair-wind navigation, to any market place upon the sea-shore in the wide world.

Then, New-Orleans, instead of New-York, should glut the markets of California and Peru with breadstuffs, cucuyos and merchandise.

Then, the valley of the West, instead of the coal mines of England and the mines of Penn-

* See an article upon this subject, in one of the numbers of the "Western Review," published at St. Louis.

sylvania, should supply the vast demands which the Pacific Ocean has, and the far greater which it will have, for coal. It will give New-Orleans the command of a better coffee market than any she now has; and she can then send coffee, along with Louisiana sugar, up to that other mouth of the Mississippi which Illinois enterprise has discovered in Lake Michigan.

Therefore, let the people of the South and West take time by the forelock, and wake up Tennessee and Kentucky, and other parts, to their duty, in that great manufacturing and mining region which nature has fitted them to be.

The people of South America and California, and the isles of the Pacific, will depend on them for merchandise; for the ports and outlets to market of the western people; and southern states will then be the half-way house on the great market-ways. England and Europe, to reach the "grand ocean," as the French navigators style the Pacific, will have to pass by our very doors as they go, and come within call as they return.

A magnificent future is that which commerce, by the laws of trade, and the decrees of nature, holds in store for the people of the South and West. If we will only do our part, the prize is won, and the wealth and the power are ours also.

VII. Should there ever be, and doubtless there will be, several such highways across the Isthmus; and should war ever again occur among maritime nations, is it to be supposed that the belligerents, be they who they may, will look on and see us quietly enjoying all the advantages of these thoroughfares, and becoming thereby a head and shoulders taller than all the nations in the world? No, never.

Moreover, we are bound by that golden cord which never has, and—as far as it depends upon the people from my part of the country, whom I now address—which never can be tarnished or weakened—by the faith of this great nation, are we bound to maintain the neutrality of those highways.

That we may do this—that we may be true to ourselves, and secure in the possession of that great edifice of commerce, of wealth, grandeur and power, the keystone of which you have assembled to put in, the naval supremacy and command of the Gulf of Mexico, a *mare clausum*, and an American sea, is a *sine qua non*. It will never do to let Great Britain, or any other power, command that sheet of water with her ships of war.

To whom shall its defences be entrusted, but to us of the South and West, who have so much at stake there? It is well known that we will fight hard for our cotton bags.

Therefore, fortify the Tortugas, and build up the navy-yard at Memphis. The South and the West have been thimble-rigged out

of that navy yard. The law made it a naval depot, or dockyard. It has been converted into a rope-walk, and thereby it has become a by-word and a reproach, if not an eyesore to its friends.

I repeat here what I have recently had occasion officially to say upon the same subject;

"The enterprise of American citizens is about to open one or more commercial highways across the Isthmus. The access to them lies through American waters. They will be the channels of communication between the distant shores of the nation—its great highways from one part of the Union to the other.

"The faith of the nation has been pledged, touching the neutrality of some of these communications. The country will expect its navy to keep them open in war, and to preserve unsullied the national faith.

"The way to these thoroughfares, and the road to market from the Mississippi valley, run side by side through the Gulf of Mexico.

"No system of measures for providing for the common defence can be considered either complete or effective, unless it secure the command to us of this *mare clausum*. Its commercial importance, already great, will, in a few years more, be paramount.

"Already the natural outlet for millions, it is destined to surpass all other arms of the sea for its commerce, its wealth, and its national importance.

"The currents and winds at sea are such as to unite, in the Florida Pass, the commercial mouth of the Amazon with that of the Mississippi.

"The market-way across the seas, from the valley of the Amazon, the Orinoco, the Magdalena, the Atrato, the Coatzacoalcas, the Rio Grande and the Mississippi, passes through or upon the borders of this sea.

"The works are projected which will turn in that direction the commerce of the East; and all the ships engaged in it, whether from Europe or America, will sail through the Gulf of Mexico and Caribbean Sea, passing by our doors both coming and going.

"Through the Gulf of Mexico and Caribbean Sea, the country requires safe conduct in war for its mails, its citizens, and their merchandise, as they pass to and fro from one part of the Union to the other.

"The natural outlet to a system of river basins, that include within their broad dimensions 70 degrees of latitude—the most fertile lands in either hemispheres, and an area of them exceeding in extent the whole continent of Europe—this arm of the ocean that is spread out before our southern doors, occupies that position upon which the business of commerce is to reach its summit level.

"Here is to be the scene of contest be-

tween maritime nations in war. Here are the gateways of the ocean; and the power will hold the keys thereof that has the naval supremacy in the Gulf of Mexico.

"The great sea-fights of this country are probably to take place here."

In the valley of the Mississippi nature has placed the means, and our free institutions, the men for defending that gulf and the interests connected therewith. Unless we avail ourselves of these resources, it will be difficult and expensive to command it in war.

Therefore, in providing a system of national defences for our interests in that quarter, one of the first steps is to complete the navy-yard at Memphis, and make of it an establishment worthy of its objects, and capable of giving force and effect, in time of war, to the immense naval resources, power and strength of the great valley of the West.

To Memphis, Pensacola, and the fortifications at Key West and Tortugas, ought to be mainly entrusted the defences of the Gulf of Mexico.

It has been said, "It is too expensive to build a navy-yard at Memphis; piles will have to be driven at the edge of the river;" yet it is not too expensive to drive them in the bottom of the sea at New-York, and build there a dock, which the Secretary of the Navy, in his last annual report, tells the country has cost \$2,146,255.

I do not comprehend the logic which makes it too expensive to provide for the common defences in the Gulf of Mexico, the most vital part in our whole system, when it has been by no means too expensive to provide defences for the Atlantic. Provide as effectually, or as ineffectually, we care not which, for the common defence of the Gulf as for that of the Atlantic. All we want is justice, even-handed, impartial justice.

According to the report of the Secretary of War, just presented to Congress, on the subject of fortifications, the amount expended upon the army and navy, exclusive of dock-yards, in providing for the common defence since 1816, has amounted to upwards of seventy-five millions of dollars. How much of this has been expended upon gulf defences, or for the benefit of the people whom I address? Precious little. We all know the Atlantic states have enjoyed a double benefit: first, of having the works in them; and secondly, of drawing the money for them from the South and West, and spending it in the North and East.

To me, gentlemen, it is immaterial whether a proper naval establishment at Memphis will cost one or twenty millions of dollars to found it. Let us have it, I say, if it be necessary. If the country want it, and if great interests of state demand it, shall a nation like this expose itself to injury and

insult because it cannot afford to supply the necessary means of defence to any part of it? Let us have an establishment there worthy of its object and of the people whose purposes it is to subserve. It should be the pride and the boast of the entire Mississippi valley. In times of peace it would stand you in the place of a great university for teaching the higher branches of many of the mechanic arts to your young men.

The workshops connected with such an establishment would be filled with apprentices whom the government pays while they are learning their trade.

These workshops would draw to your section of country many of the most skilful mechanics. They would stimulate the industrial pursuits of that region, and assist in the development of its mineral resources. These are some of the advantages which such establishments carry along with them in peace, and make their presence so greatly to be desired along the Atlantic borders.

You have assembled to plan foundations for your future commerce; to provide the means for defending that commerce, appears to me to be intimately and necessarily connected with the subject of your deliberations. Hence the reason for calling your attention to a suitable naval establishment at Memphis.

VIII. The free navigation of the Amazon is the greatest commercial boon that the people of the South and West—indeed, that the people of the United States can crave. That river-basin is but a continuation of the Mississippi valley. The Mississippi takes its rise near the parallel of 50° north latitude, where the climates are suited to the growth of barley, wheat, and the hardy cereal grains. The river runs south, crossing parallels of latitude, and changing with every mile its climate, and the character or quality of the great agricultural staples which are produced on its banks.

Having left behind it the regions for peaches, wheat and corn; for hemp and tobacco; for pulse, apples, whiskey, oil and cotton; and having crossed the pastoral lands for hogs, horses and cattle, it reaches, near the latitude of 30°, the northern verge of the sugar cane.

Thence expanding out into the gulf, with all these staples upon its bosom, to be exchanged for the produce of other climes and latitudes, it passes on to Key West and the Tortugas; and there at that commercial gateway to the ocean, which opens out upon the Tropic of Cancer, it delivers up to the winds and the waves of the sea for the distant markets, the fruits of its teeming soil and multitudinous climes.

Then comes in the great valley of the Amazon; taking up the agricultural produce and staples which the Mississippi had just

reached, and pushing the variety beyond the equator, it increases, and far down into the other hemisphere diversifies the wonderful assortment, until sugar and coffee, rice and indigo, drugs and spices, cocoa and cotton, cochineal and tobacco, India rubber, dye-woods, peltries, flax and wool, gums, various ornamental woods, mines of silver, gold and precious stones, of new varieties, kinds and virtues, have been reached, and added to the list of countless treasures, boundless commercial capacities, and dazzling resources, of these two magnificent water-sheds.

Save and except tea, which is the only article of commerce that is gathered from the field, the forest or the mine, that is not to be found in one or the other of these two river basins, everything that is grown or cultivated upon the face of the earth is to be found in equal, if not in greater perfection and abundance, in one or the other of these valleys, than in any other part of the world.

One of these is in the rear of New-Orleans—the other, in its front. It is for this convention to say whether these two rivers shall be united in the bonds of commerce or not.

The Amazon, with its tributaries, is said to afford an inland navigation, up and down, of not less than 70,000 miles. The country

drained by that river, and water courses connected with it, is more than half as large as Europe, and it is thought to contain nearly as much arable land within it as is to be found on that continent. It has resources enough to maintain a population of hundreds of millions of souls.

The navigation on that river is at present such, that the people of the upper country can make but one trip in the year. They have there, in their delightful climate of an everlasting spring, the calm season and the trade-wind season. The trade-winds blow up the river. In the calm season, the natives, in their rude bungaloes, loaded with the produce of the upper country, drift down with the current. Arrived with their stuff at Para, they sell almost for dollars what they got for cents at the place of production.

Having completed the business of the season, they wait for the S. E. trade-winds to set in; with them they return, and complete the business and the trading for the year.

To afford the Convention an idea of the business carried on, by sea, with Para, I quote returns of exports for the year ending Dec. 31st, 1850, which Mr. Norris, the American Consul for that port, has had the kindness to furnish me :

EXPORTS FROM THE PORT OF PARA FOR THE YEAR ENDING DEC. 31, 1850.

	Spice, Arro- bas	Sassa- parilla, Arro- bas	Annatto, Arro- bas	Tapices, Alquiores	Cleaned Rice, Arro- bas	Cocoa, Arro- bas	Balsam Copaiva, Canadas	Cotton, Arro- bas	India Rubber, Arro- bas	Tein- glass, Arro- bas
To the United States..	—	58	1,638	3,254	3,990	28,479	1,130	—	50,069	—
Total Exports.....	1,633	4,558	6,655	7,595	82,606	283,753	1,837	3,132	79,335	834

	Nuts, Alquiores	Rice in Husk, Alquiores	Tonks Beans, Arro- bas	India Rubber Shoes, Pairs	Sugar, Arro- bas	Dry Hides, No.	Green Hides, No.	Grass Rope, Inches	Gua- rana, Arro- bas
To the United States.....	21,889	—	74	143,247	—	11,581	10,196	—	—
Total Export.....	47,528	63,676	92	240,999	9,551	26,463	12,670	5,581	93

This is a growing business.

A friend who has crossed the Andes, and is now on his way home, down the Amazon, informs me that parts of the Puna country, of Peru and Bolivia, and in which the waters of the Amazon take their rise, are already over-populated; that portions of the Amazonian water-shed, over which he had passed, are "rich in flocks of sheep; and all that is wanted is a close market (which the free navigation of the Amazon would give) to induce the shepherds to raise millions." No other part of the world grows wool like this. It is peculiar.

He reports fine sugar and coffee plantations there, with cotton growing wild; also, there are cinnamon groves, and forests of the tree from which the Peruvian bark, which affords quinine and physic to the world, is taken; and being put on the back of these sheep and asses, is transported from the

head navigable waters of the Amazon, 600 miles, among the clouds and snow-capped mountain-ranges, to the Pacific.

It now goes west, and when it arrives at the seaport town of Arica, it is worth annually, half a million. With the right to send an American steamboat up the Amazon, all this stuff would come east and flow down that river.

With the free navigation of the Amazon, a steamer might load at St. Louis with the produce of those high latitudes, and deliver its cargo right at the foot of the Andes, where the Amazon leaps down from the mountain into the plains below. With a portage easy to overcome by the hand of improvement, she could then ascend the steppes of the Andes, travel several hundred miles farther up, and deliver her cargo within hail of Cuzco and the mines of Peru.

The free navigation of that river is in-

cluded, I conceive among the subjects, with regard to which the committee has invited me to express my views to the Convention; and I hope the Convention will deem it not unworthy of their careful consideration.

Considering the softness of its climates, the fertility of its soils, and the lavish hand with which nature stands ready to fill for the husbandman the horn of plenty there; and when man is thus surrounded, considering that his industrial energies are for the most part addressed to the tillage of the earth; and considering, moreover, the character of the people who inhabit that valley of the South, and the character of the people who inhabit this of the North; we are struck with the fact—and it is a physical fact—that the valley of the Amazon is but a commercial appendage of the Mississippi; and that it rests with us and the course of policy which we may pursue, whether this physical fact shall be converted into a practical one; and whether the South will suffer the geographical advantages of its position with regard to that region to go by default, as it has similar advantages in other cases.

Attention to this subject cannot be given too soon, or too earnestly.

Its importance is great. Legions of benefits and advantages are to flow from it; many of them are palpable and obvious; some are dim in the mists of the future; but all of them are certain. In short, as a commercial matter, the free navigation of the Amazon is the question of the age. As time and use shall develop its bearings, our children will weigh the effects upon the prosperity of the country, of the free navigation of the Amazon with the acquisition of Louisiana. They will place them in the balance together to contrast and compare them; and on considering the effects of each, they will dispute and wrangle as to which of the two has proved the greater blessing to their country.

I inclose, herewith, a pamphlet, entitled "Commercial Conventions—Direct Trade, &c.," in which the subject of steam communications with the *mouth* of the Amazon, but no further, is treated.*

The question which I propose for the especial consideration of the Convention, relates to the free navigation of the Amazon itself—to the right of the people of the United States to send their steamboats to that river, to ply up and down it, as they do upon the waters of their own Mississippi, and to buy, sell, and get gain on the banks thereof.

Commerce, so far as climate and soil are concerned in ministering to its wants and in imparting health and activity to its influences, is based upon an exchange of the

produce of one latitude for the produce of another, and for this simple reason: that the planter who grows sugar in Louisiana, does not wish to exchange it for Brazil or any other sugar. He may exchange it for Brazil coffee, or for Brazil anything else that is *not* sugar.

For this reason, Europe, for hundreds of years past, has been struggling for the commerce "of the East;" and for no other reason, than that latitudes and climates, and consequently wants and produce, that are not to be found or satisfied in Europe, abound in "the East."

In a commercial sense, the valleys that are drained by the "father of waters," and the "king of rivers," as the Amazon is called, are complements of each other. What one lacks, the other supplies. Together, they furnish all those products and staples which complete the list of articles in the circle of commerce.

The right of our people to go with their Mississippi steamers into the Amazon, will, when exercised, draw emigrants to that valley, who, being there, will become our customers; and as soon as the proper impulse is given to their commerce and their industrial pursuits, we shall find there at our doors, instead of away on the other side of the world, all the productions of "the East." In short, "the East," in one sense, will be brought within eight or ten days' sail of New-Orleans, instead of being removed to the distance of four or five months off, as it now is.

Several nations, as Bolivia, Peru, Ecuador, and Brazil, are the owners of the Amazon and its navigable tributaries.

Brazil is the principal owner. All the lower Amazon is hers; and she has given none of the upper countries as yet the right of way through it to and from the sea.

The question then is, do the people who are represented in this Convention set any value upon the right to steam and trade up and down the navigable streams of that magnificent water-shed? At present the country is for the most part a wilderness of howling monkeys and noisy parrots; its boundaries are fringed with settlements; but only here and there, when you leave the outskirts of the valley and begin to penetrate into the interior, are the traces of civilized man to be found.

To obtain this right is the work of diplomacy. But the states and people who have been invited to this Convention, may by their action, influence that diplomacy.

Brazil may be invited to give the free navigation of this river away as a boon to civilization, and make it common to the world. But it is not to be supposed that Brazil will part with such a jewel without a consideration.

* This paper is published in preceding pages of this volume.

Shall it be bought with a sum of money? Or shall the free navigation of the Mississippi be offered to Brazil in exchange for the free navigation of the Amazon?

By our own laws, an English vessel, or the vessel of any other nation at peace with us, is as free to sail up the Mississippi River, land and take in a cargo at St. Louis, and to come down again, as she is to go up the Chesapeake Bay to Baltimore, or the Delaware to Philadelphia.

But do such foreign vessels go up to St. Louis? No. Why? Because when they arrive at New-Orleans with their cargoes of foreign merchandise, which they have brought across the seas, they find it cheaper to send it up in one of our river-boats, than to take it up themselves; and, therefore, though foreign vessels, by our own laws, may go up and come down, yet the free navigation of the Mississippi, to this extent, has proved of no practical value to any of them. Would they go up farther if they could?

Still the time was, when the free navigation of the Mississippi River was a question of deep and absorbing political interest to us; and we may infer, therefore, that the diplomatists of the country would act, when the proper time comes, with more confidence touching the offer to Brazil of the free navigation of the Mississippi for that of the Amazon, after having learned the opinion and wishes upon the subject of the people of the Mississippi valley.

Admitted upon the Amazon with their boats, our people would desire to participate there in what is called with us "the river trade;" for considering that the habits of the Amazonians are not at all aquatic, it is not by any means probable, that Brazilian enterprise would be sufficient to supply the boats and boatmen requisite for this river trade. She cannot do it now.

But are we prepared to let Brazilian capital, and Brazilian subjects, compete with our own people for the business—the river trade—of our own Mississippi waters? We should ask nothing of Brazil which we are not willing to render to Brazil. Are we prepared, therefore, to offer to admit Brazilian subjects to an equal participation with our own citizens, of the trade of the Mississippi River, on condition that she will admit our citizens to an equal participation with her own subjects in the river-trade of the Amazon and its tributaries?

That is the question as to which I desire to draw an expression of opinion from the Convention, because I believe that that opinion, being regarded as the opinion of the people of the Mississippi valley, would have a bearing upon the subject, as one of a practical nature, and of paramount importance.

Suppose that the United States should declare that the citizens and subjects of all

nations should have the same rights to build and launch boats on the Mississippi River that our people have; that the right to take freight from one landing or town to another, and to trade up and down the river, should be as perfect and as complete to the foreigner of whatever nation, as it is to the American citizen—what would be the effect?

Such a surrendering of the "coasting trade," as the river-trade may be properly called, might possibly induce a few foreigners to send over their capital and build boats. But these boats, to compete with our own boats, would have to be manned by our own watermen—officered by our own people. And such a law, therefore, might interfere with American owners.

But, instead of such a privilege being offered to *all* nations, suppose it were offered only to Brazil, in exchange for like privileges to our own citizens upon her rivers—what would be the result then?

Why, this: Brazil has not even the energy among her own subjects to put boats upon her own rivers, where they have the monopoly of trade and navigation; much less would her subjects have the enterprise to come here and put boats upon the Mississippi, to run in competition with our own. On the other hand, we, who have the enterprise, the energy, the skill in boat-building, would, with the knowledge, over all the world, which we have in steamboat river navigation, go to the Amazon, and enjoy there something like a practical monopoly. For it is not to be supposed that, if we offer to divide our Mississippi River trade with her subjects, on condition that she will make a like division to us of her Amazonian trade—it is not, such being the conditions, to be supposed, I say, that any other nation would on either side be admitted into the arrangement. There is but one Mississippi River, and but one Amazon, in the world; and there is no equivalent for the free navigation of the one, but the free navigation of the other. Therefore, no nation on the earth can buy and sell a commercial jewel of such value.

The question, thus narrowed down, is simply this: In enlarging and extending the foundations of the commercial system, which is to make of the United States the greatest nation the world ever saw, and of the Mississippi valley the heart and centre of it—are you willing to give the free navigation of this river for that of the Amazon?

The subject of the free navigation of the Amazon and its tributaries, is a vast one. I have barely touched it. Nor is it necessary for me to attempt a discussion of it: do it justice, I could not. To go into the merits of it, either with the committee, or before the Convention in whose behalf I have been drawn into the subject, I have not the time; and if the time, not the abilities. I merely

wished to put the question, and to subscribe myself, gentlemen of the committee, a man of the Southwest, and one who, having the interests of his country greatly at heart, is, with his feeble power, at the service of the committee and Convention in all things for good.—*Lieut. M. F. Maury.*

SOUTHERN INDUSTRY—PROGRESS OF.—PROSPECTS OF THE COTTON INTEREST; POSITION OF SOUTH CAROLINA; INFLUENCE OF MECHANIC ARTS AND MANUFACTURES; WHAT THE SOUTH IS CAPABLE OF IN COTTON MANUFACTURES; LABOR AT THE SOUTH; FACILITIES FOR STEAM AND WATER POWER; EMPLOYMENT FOR THE POORER CLASSES, ETC.—The Institute, whose first annual exhibition is about to be opened, is something new in South Carolina. If it succeeds in its purposes, a new era in our history will be dated from this anniversary. Hitherto our state has been as purely agricultural as a civilized community can ever be; and for the last sixty years our labor has been chiefly devoted to the production of one market crop. The value of this agricultural staple has been for many years gradually declining, and for the last seven or eight has not afforded to our planters an average net income exceeding four and a half per cent. per annum on their capital. Within the last few months prices have somewhat rallied; but there is not the slightest ground on which to rest a hope that they will ever hereafter, for any series of years, average higher than they have done since 1840: on the contrary, it is inevitable that they must fall rather lower. The consumption of cotton, even at late average prices, cannot keep pace with our increasing capacity to produce it; and the article may, therefore, be said to have fairly passed that first stage of all new commercial staples, in which prices are regulated wholly by demand and supply, and to have reached that, in which, like gold and silver, its value, occasionally and temporarily affected by demand and supply, will in the main be estimated by the cost of production. Now, on lands that enable the planter to produce an average crop of two thousand pounds of ginned cotton for each full hand, or for every thousand dollars of capital permanently invested, he may realize seven per cent. per annum on his capital, at a net price of five cents per pound, or five and a half to six cents in our southern ports. There is an abundance of land in the South and south-west, on which, unless the seasons change materially, or the worm becomes an annual visitor, all the cotton which the world will consume for many generations to come may be grown at this rate. We have ample slave labor to cultivate it, and the result is inevitable that the average of prices must soon settle permanently about this point.

If these views are correct, what are we to

do in South Carolina? But a small portion of the land we now cultivate will produce two thousand pounds of ginned cotton to the hand. It is thought that our average production cannot exceed twelve hundred pounds, and that a great many planters do not grow over one thousand pounds to the hand. A thousand pounds, at five cents net, will yield about two per cent., in cash, on the capital invested, and twelve hundred pounds but three per cent., after paying current plantation expenses. At such rates of income our state must soon become utterly impoverished, and of consequence wholly degraded. Depopulation, to the utmost possible extent, must take place rapidly. Our slaves will go first, and that institution from which we have heretofore reaped the greatest benefits will be swept away; for history, as well as common sense, assures us, beyond all chance of doubt, that whenever slavery ceases to be profitable it must cease to exist.

These are not mere paper calculations, or the gloomy speculations of a brooding fancy; they are illustrated and sustained by facts, current facts of our own day, within the knowledge of every one of us. The process of impoverishment has been visibly and palpably going on, step by step, with the decline in the price of cotton. It is well known that for the last twenty years, floating capital, to the amount of five hundred thousand dollars per annum, on the average, has left this city and gone out of South Carolina, seeking and finding more profitable investments than were to be found here. But our most fatal loss, which exemplifies the decline of our agriculture, and the decay of our slave system, has been owing to emigration. The natural increase of the slaves in the South, since the prohibition of the African slave trade, has been thirty per cent. for every ten years. From 1810 to 1820, the increase in South Carolina was a fraction above that rate. From 1820 to 1830, it was a fraction below it. But from 1830 to 1840, the increase was less than seven per cent. in ten years; and the census revealed the painful and ominous fact, that the number of slaves in South Carolina was eighty-three thousand less than it should have been. No war, pestilence, or famine, had visited our land. No change of climate or of management had checked the natural increase of this class of our population. There can be no reasonable doubt that the ratio of its increase had been as fully maintained here as elsewhere. But the fact is, that, notwithstanding the comparatively high average price of cotton from 1830 to 1840, these slaves had been carried off by their owners at the rate of eight thousand three hundred per annum, from a soil producing to the hand twelve hundred pounds of cotton, on the average, to one that yielded eighteen hundred pounds. And there is every reason to apprehend that the census of next year will show,

that the whole increase of the last decade, which must amount to one hundred thousand, has been swept off by the still swelling tide of emigration.

Under these circumstances, the question may well be asked again, what are we to do in South Carolina?—for it is but too obvious that something must be done, and done promptly, to arrest our downward career. To discuss this question fully in all its bearings, and give a satisfactory answer, would consume more time than can be allowed on this occasion; but I trust its importance will be my excuse, if I trespass by a somewhat elaborate examination of some of its essential features.

The first remedy for our decaying prosperity which naturally suggests itself is, the improvement of our agricultural system; and of late years a great deal has been said upon this subject. That it is susceptible of great improvement is very clear; but it is equally and lamentably true that little or nothing has as yet been done. It must be owned, that neither our agricultural societies nor our agricultural essays have effected anything worth speaking of. And it does seem that, while the fertile regions of the south-west are open to the cotton planters, it is vain to expect them to embark, to any extent, in improvements which are expensive, difficult, or hazardous. Such improvements are never made but by a prosperous people, full of enterprise, and abounding in capital, like the English, or a people pent up within narrow limits, like the Dutch. Our cotton region is too broad, and our southern people too homogeneous for metes and bounds, to enforce the necessity of improving any particular locality, and our agriculture is now too poorly compensated to attract superfluous capital, or stimulate to enterprise. It is clear that capital, enterprise, some new element of prosperity and hope, must be brought in among us from some yet untried or unexhausted resource, before any fresh and uncommon energy can be excited into action in our agricultural pursuits. In fact, if prices had not gone down, and our lands had not worn out, it may be said, with great truth, that we have too long devoted ourselves to one pursuit to follow it exclusively much longer with due success in all those particulars which constitute a highly prosperous and highly civilized community.

It is a common observation, that no man of one idea, no matter how great his talent and his perseverance, ever can succeed; for both human affairs and the works of nature are complex, exhibiting everywhere an infinite variety of mutual relations and dependencies, many of which must be comprehended and embraced in searching after truth, which is the essential basis of all real success. So if, guided by the light of history, we look back over the long track of time, we shall find that

no nation devoted exclusively to one pursuit has been prosperous or powerful for any extended period. Even the warlike Spartans zealously promoted agriculture. And Rome began to decline from the moment that she ceased to draw her soldiers and her generals from her fields and vineyards. But a people wholly agricultural have ever been, above all others, in all ages, the victims of rapacious tyrants, grinding them down, in ancient times, by force of arms; in modern, by cunning laws. The well-known fact suggests the obvious reason, and the reason illustrates our present condition and apparent prospects. The mere wants of man are few and limited. The labor of one can supply all that the earth can yield for the support of ten. If all labor, there is useless superabundance; if few labor, there is corrupting sloth. And if advancing civilization introduces new wants, and the elegancies and luxuries, as well as the necessities of life, are to be obtained, the products of agriculture are the least profitable of all articles to barter. Besides that most nations strenuously endeavor to supply them from their own soil, they are usually so bulky and so liable to injury that they can seldom be transported far, and never but at great expense. It is only when an agricultural people are blessed with some peculiar staple of prime importance, nowhere else produced so cheaply, that they can obtain, habitually, a fair compensation by exporting it. But in the present state of the world, when science and industry, backed by accumulated capital, are testing the capacity of every clime and soil on the globe, and the free and cheap communication which is now growing up between all the ends of the earth enables wealth and enterprise to concentrate rapidly on every favored spot, no such monopoly can be long enjoyed if sufficiently valuable to attract the cupidity of man. South Carolina and Georgia were, for some years, almost the only cultivators of cotton in America. As late as 1820, these two states grew more than half the whole crop of the Union. They now produce about one-fifth of it. Such is the history of every agricultural monopoly in modern times.

But we may safely go farther and assert, that even when a people possess a permanent and exclusive monopoly of a valuable agricultural staple, for which there is a regular, extensive, and profitable foreign demand, if they limit their industrial pursuits to this single one they cannot become great and powerful. Nay, they cannot now attain the front rank of nations, if they also pursue, as we do, most of the other branches of agriculture, and maintain, as we do not, an independent government of their own, and exercise the power of making war and peace. The types of man have been infinitely varied by his wise Creator. Our minds are as diverse as our forms and features. The tastes, the talents, and

the physical capacities with which we are endowed, are as widely different, and as strongly marked for their appropriate pursuits, as those pursuits have been diversified by Providence. War and public affairs call into action a large proportion of the highest qualities of man, and these, sustained by a simple husbandry, did, in ancient times, make some nations powerful and prosperous. But war is no longer profitable. National pillage is at an end, and territorial aggrandizement, a doubtful benefit at best, is both uncertain in its tenure, and costly to maintain. Now and henceforth, national grandeur, to be real and lasting, must be based upon the arts of peace. And in these noble arts the competition of nations has become so keen and persevering, that every one must develop, to the full extent, its natural advantages, and keep in constant play each and all of the natural endowments of each and all its citizens, or it will fall rapidly behind in the arduous but steady march of progress. The soils and climates of Italy, Spain, and the low countries, are as prolific, and the native genius of their people is, doubtless, equal to what it was in the days of Augustus, Charles the Fifth, and Van Tromp; yet they have sunk from the highest almost to the lowest point in the scale of nations. But their pursuits are no longer diversified as they once were. Their ships have been swept from the seas—their armies from the land. Their manufactures have been superseded, and commerce has deserted their ports, while they have introduced no new industrial avocations to supply their losses. All the endowments of the whole people being no longer taxed to full and wholesome action, they have languished in idleness, and national decay has, of necessity, followed. So with us. Our agriculture, though it might embrace a wide range in such a climate as ours, and furnish us with highly compensating exports, cannot, even with the assistance of public affairs, absorb all the genius, and draw out all the energies of our people. The infinite variety of gifts which it has pleased God to bestow on man, must be stimulated into useful action by an equal variety of adequate rewards. It is to the never-ceasing demands of advancing civilization, in all its stages, for new arts, new comforts, and new luxuries, more knowledge, and wider intercourse of men with one another, that we owe all the discoveries and inventions which have ameliorated the condition of humanity. And every new conception, every new art, every new combination of pursuits, industrial and intellectual, which has expanded the genius, and augmented the power of man and nations of men, has rendered it more and more impossible for an individual of one idea, or a people of one occupation, to attain prosperity and influence.

Since, then, even a flourishing agriculture could not of itself make us permanently

rich or great, the greatest improvements that could be made in our present decaying system, would be but a partial and insufficient remedy for the evils under which we labor. We must take a wider range, and introduce additional pursuits, that will enlist a broader interest, that will absorb all our redundant capital, and awaken all the intellect and energy now dormant in our state. On this occasion, however, we will confine our discussion to new industrial pursuits. If we look around us we shall see that those nations only are powerful and wealthy, which, in addition to agriculture, devote themselves to commerce and manufactures; and that their wealth and strength are nearly in exact proportion with the extent to which they succeed, in carrying on together these three great branches of human industry. The principle of the Trinity, perfected in the Deity, seems to pervade all the works of nature and the affairs of man. Time divides itself into three parts—three lines are necessary to inclose space—a proper government must be distributed among three fundamental departments, and the industrial system of a people must, if it would flourish, embrace agriculture, manufactures and commerce, and cherish each in just proportion. Commerce, experience shows us, is the hand-maid of manufactures. Agriculture does not create it, as our own example proves, for we have literally none we may call our own. With eight millions of agricultural exports, South Carolina has scarcely a ship, or a sailor, afloat upon the seas. The Institute, whose anniversary we have met to celebrate, was founded, in part, for the purpose of assisting to lift the mechanic arts from the low condition they have hitherto occupied in South Carolina and the South, and to stimulate our people to avail themselves of the manufacturing and commercial resources they possess. These resources are little known and less appreciated, but it is demonstrable that our southern states possess natural advantages, which enable them to compete successfully with any other, in manufacturing the principal articles now required for the necessities, the comfort and the luxury of man. While, with our abundant materials for ship-building, our noble bays and rivers, and our shore line of twenty thousand miles of seacoast, we have only to make the attempt, to obtain, beyond rivalry, the entire command, of at least our own commerce. In the distribution of these natural advantages, the share which has fallen to South Carolina is not inferior to that of any of her sister states. And the present stagnant and retrograding condition of our uncompensated industry, loudly appeals to us to make an effort to secure the full enjoyment of them.

But there are difficulties, serious difficul-

ties to be overcome, ere this can be effected—and strange to say, these difficulties are almost wholly of a moral character. There is no want of genius, or energy, or skill, or, as yet, even of capital, in South Carolina. We have all these, perhaps, in full proportion to our natural advantages. But ignorance and prejudice are to be encountered—petty interests, false reasoning, unsound calculation, and perhaps, above all, certain traditional habits of thought and action. The ancient and illustrious calling of agriculture, which, while it cherishes and promotes a generous hospitality, a high and perfect courtesy, a lofty spirit of independence, and uncalculating love of country, and all the nobler virtues and heroic traits of man, is apt to engender a haughty contempt of all mechanic arts, as uncreative in their nature and entirely devoted to petty details, which cramp the genius and character, and are wholly inconsistent with those grander aspirations which make the capacious intellect and exalted soul. The agriculturist, it is said, is the sole producer—the mechanic only shapes and changes—commerce simply transfers. These distinctions are only verbal—mere words without any philosophical or rational meaning. God alone creates. He provides the agriculturist with his mighty machine, the earth, and his all-powerful agents, air, water, heat. Operating with these, the cultivator changes a seed into a plant, with leaves, blossoms, bolls and cotton. The mechanic invents, almost creates his own machine, and by the aid of science, decomposing the very elements, he compels their energies, long cunningly hid, to perform the tasks he sets them in perfect accordance with his will. The agriculturist has converted seed into cotton of little value as it passes from his hands. The mechanic converts it into cloth, fit for immediate and indispensable use; but first he has converted wood and iron into machinery, that can perform the labor of a thousand men; he has turned water into steam to give it life, and has spun from the produce of a single seed, a thread more than a hundred and sixty miles in length. Which is the most wonderful work? Which requires the most comprehensive genius? Which is the nearest approach to the creative power? Whoever, by the application of capital, industry or skill, adds value to any article, is, to that extent, undoubtedly a producer. The merchant who transports the cloth from Charleston to California, and thereby enhances its value, is a producer, as well as the manufacturer who has made cloth from cotton, and the planter who has made cotton from seed.

It is true, as charged, that the mechanic art deals extensively in minute details. In the construction of machinery, it is neces-

sary that its 'smallest parts should be as perfectly adapted as its largest, to the end in view; and the nicest care is necessary in keeping it in operation. And so throughout the whole mechanic range. Thread by thread the cloth is woven. The Smith's work is wrought blow by blow. The carpenter removes a shaving at a time. The ship grows as the spikes are driven. But the same attention to detail is requisite in every other avocation, in every line of business, in every branch of science, in every department, public and private, of human affairs, and the neglect of it is everywhere attended with the same utter failure of valuable results. Of all the causes which have combined to impair the agriculture of South Carolina, the most injurious, perhaps, is the habitual want of personal attention to details by the planters themselves, and the impossibility of procuring subordinate agents, who will bestow that thorough and systematic care on small matters, which is absolutely indispensable to successful husbandry.

It is certain that many of the most renowned men and nations of antiquity, looked upon manufactures, trade, commerce and all the mechanic arts with aversion and contempt. The citizens of Sparta were prohibited from engaging in them. Aristotle denounced them. Plato excluded them, as far as possible, from his republic. The Greeks and the Romans left them to foreigners and slaves. Cicero was disgusted with the idea "that the same people should become, at once, the lords and factors of the universe." France, in later times, forbade her noblemen to engage in trade, and even, in the last century, as great a philosopher as Montesquieu, thought that England had impaired her greatness by permitting her noblemen to do it. Thus this prejudice and fallacy is of ancient date and illustrious descent. Yet none could be more absurd, more false, more fatal to all who have adhered to it, individually or nationally, in modern times. Modern civilization took its rise in Italy, and the first clear dawn of it reveals to us Venice and Genoa, commercial and manufacturing cities, at the opposite outlets of the fertile plains of Lombardy, leading the van of progress. The first established era of refinement, is still known as the age of the Medicis—the merchant princes of Florence. The commercial and manufacturing league of the Hanse Towns next civilized the north of Europe, and from them it was that England learned those arts of agriculture, manufactures and commerce, which have made her the most powerful nation that ever figured on the globe, and her people, truly and emphatically, and grandly, too, the "the lords and factors of the universe."

Shall we, following the false lights of

other ages, or the silly impulses of ignorant prejudice, disdain a career as great and glorious as that of England? Or shall we, individually, shrink from a strict and faithful attention to details, in all our pursuits, from the preposterous belief, that such a course is inconsistent with greatness of intellect and magnanimity of soul? Bacon said, with profound truth, that "he that cannot contract the sight of his mind, as well as disperse and dilate it, wanteth a great faculty." The truly great man contracts and expands his views with equal facility, and sweeps, with the same ease, the narrow defiles of detail and the broad fields of generalization. Cæsar, it is said, could call by name every soldier in his army. Charlemagne, whose achievements made the epoch commonly recognized as separating modern from ancient history, took care to have the superfluous eggs and garden vegetables of his private estates sent to market. Alfred, the founder of the British monarchy, translated the fables of Æsop, and wrote others himself. Napoleon won his mighty battles by calculating steps and counting minutes. Those overwhelming armies with which he crushed, so often, the combined powers of continental Europe, were concentrated on a given spot, at a given hour, by orders issued months before to many corps separated by hundreds of leagues, in which not only the precise route of each was pointed out, but their daily marches, their halts, their rendezvous, the obstacles they would encounter, and the movements by which they were to be overcome, were all accurately and minutely designated. Can we then say, that it is only narrow minds and dull spirits that stoop to investigate and carry out details? The idea is ridiculous.

It is also said, that where manufactures and commerce flourish, morals are corrupted and free institutions do not prosper. It is undoubtedly true, that when men congregate in cities and factories, the vices of our nature are more fully displayed, while the purest morals are fostered by rural life. But, on the other hand, the compensations of association are great. It develops genius, stimulates enterprise, and rewards every degree of merit. It is not true that these pursuits are hostile to political freedom. The truth is the reverse. Honest husbandmen, scattered far and wide over the surface of the country, are slow to suspect, and still slower to combine in opposing, schemes of usurpation. A steady loyalty and an earnest aversion to change, are their invariable characteristics. Merchants and manufacturers, next to lawyers, have always been the first "to snuff tyranny in the tainted breeze," and foremost in resisting it. The commercial and manufacturing people

of the North, in these states, would not bear, for a day, the aggressions on their rights, to which we of the South have been for years habitually submitting. The first battles for popular liberty, in modern times, were fought in Holland and Flanders; and the indomitable free spirit of the sturdy tradesmen and artisans of Ghent and Bruges will ever be renowned in history.

But it is strenuously contended that the introduction of manufactures in the South would undermine our free-trade principles, and destroy the last hope of the great agricultural interest. It is susceptible of demonstration, that the consequences would necessarily be precisely the reverse. The manufacturing people of the North desire a high tariff for no other purpose but to compel the non-manufacturing people of the South to buy from them, in preference to foreigners. If the South manufactures for itself, the game is completely blocked. We will, of course, use the productions of our own looms and work-shops, in preference to any others; and the North will then clamor, as the English manufacturers are now clamoring, for entire free trade, that they may exchange their industrial products, on the most favorable terms, with foreign nations. This result is as inevitable as it is obvious.

While it is the object of this Institute to promote all the mechanic arts, and every branch of manufactures, every one is aware, that the advantages we possess for manufacturing cotton are so superior, that far the greater portion of the capital and enterprise, that may be embarked in manufactures, will be absorbed in this branch, until it reaches its maximum production. By establishing this manufacture, we shall lay the foundation of many others—in fact, of all others which we can profitably carry on. All these manufactures, and the entire range of mechanic arts, pressing demand, and are wholly entitled to, the utmost consideration and encouragement from the South; but, on account of its transcendent importance, and because we are now nearly, if not quite, prepared to engage in it extensively, I shall confine my observations almost exclusively to the manufacture of cotton, and examine, so far as time allows, its prospects and bearings on state and individual interests. Already the South, through the almost unnoticed enterprise of a few of her citizens, more than supplies her own consumption of coarse cotton, and ships both yarn and cloths, with fair profit, to northern markets. Yet the political influence of the manufacturers of the South is nothing. It cannot send a single representative to Congress—perhaps not even to a state legislature. To augment that influence to a point that would make it felt, manufacturing must be so extended that a foreign market would be indispensable;

for the home market, now nearly supplied, would soon be glutted, and the moment a producer goes into the foreign market, he hoists the banner of free trade. If our Southern manufacturers stop where they now are, content with supplying home consumption, they will desire a high tariff; but, if they aspire to competition with the world, they will contend for the lowest duties upon all importations. This is exemplified, not only by the present state of things in England, but by the fact that our northern manufacturers, now wrestling with the British in China and Brazil, are violently opposed to any duty on tea and coffee, for which they exchange, in those countries, their cotton cloths. The heavy expenses of the British government compel it to tax these articles. This gives our manufacturers a great advantage, and shows the value, even in our foreign intercourse, of a cheap government at home.

But the great question is, can we compete with other nations? Can we, of the South, manufacture cotton here on such terms as to enable us to triumph over the immense capital, the far-famed cheap labor and practised skill of the great nations who are now so far in advance of us in this branch of industry? I do not speak of the northern states, because, in the very first effort, we have driven them from our markets, and have already commenced the contest with them for their own, in the only class of goods we have yet attempted. It is clear they cannot stand a moment in our way, when we have once fairly started for the prize.

There is a small amount of cotton manufactured into the finest stuffs, by the hand labor of the most wretched and ill-compensated operatives in the world. For this we will not contend, since the paupers of Europe have scarcely yet wrested it from the starving Hindoos. Skill, capital, cheapness of labor, of raw material, of buildings, machinery, motive power and transportation, combined with fitness of climate and security of property, constitute the elements of cheap and profitable manufacturing. All these we must consider in estimating our ability to compete with others in supplying cotton goods for the great markets of the world.

As regards skill, it is a mistake to suppose, that, in manufacturing cotton by machinery, any great degree of it is necessary in the operative. In a few months, an intelligent youth may learn all that is requisite in most departments; and, in a few years, he may perfect himself in the whole art. We need not go beyond the limits of our own state—scarcely of this city—to have experimental proof of this. But skill belongs to capital. In six months, with sufficient funds, we may draw from any and every quarter of Europe and the North, on reasonable terms, the full amount and precise kind of skill we may

desire, with as much certainty as we could bring, by order, a cask of wine or a bale of woollens. And capital follows profits. In the present age, wherever on the globe it can be practically and satisfactorily demonstrated that ample and secure returns are to be obtained from its investment, thither capital will soon flow, and skill be found to manage it. If it can be shown that more can be made by cotton factories in the South than elsewhere, and that property is secure with us, it would be vain to attempt to prevent the concentration here of capital for the purpose, unless the laws absolutely forbid the erection of them. We have all seen what an enormous amount of capital has been invested in cotton planting, within the last thirty years, in consequence of its being thought highly profitable. Not less than \$500,000,000 have been so invested, in that period, notwithstanding the most vigorous measures have been openly made during nearly the whole of it, from various and powerful quarters, not merely to make insecure the planter's profit, but to annihilate his property and desolate his country. But, heretofore, under equally formidable circumstances, the profits from manufacturing have been far greater than from planting cotton, and the personal superintendence of the capitalist far less laborious. In fact, this manufacture cannot fail, wherever it can be experimentally shown that it may be carried on with the greatest success, to attract capital, in preference to all others; for it has hitherto afforded, and still affords, the largest returns on its investments of any other permanent industrial pursuit the world has ever known. It is well known that a great proportion of the largest fortunes amassed in England, in the last seventy years of unparalleled accumulation, has been made by cotton manufacturers. So numerous and influential has this successful class become, that they are familiarly distinguished there by a distinct and appropriate name: they are called "cotton lords." It is understood, that thirty-three and one-third per cent. is not a very uncommon profit on their capital. This is the reason, and a sufficient one, that the consumption of cotton in England augmented from 100,000,000 pounds in 1816, at the commencement of peace, to 600,000,000 in 1846, being an increase of six-fold in thirty years. For the same reason, the consumption in the factories of the United States increased, during the same period, from some 32,000,000 pounds to above 190,000,000 pounds, being about the same proportion. Since 1846, after the reduction of duties by the act of that year, the increase of factory consumption has been beyond all precedent. It was, last year, 45,000,000 pounds greater than the year before; and for the first six months of this year, the ratio of increase was still larger. It declined during the last six months, in consequence of the temporary high price of cot-

ton. These facts show, not only the immense profits derived from manufacturing cotton, but they prove that they have been as great in our northern states as in England, since the factory consumption has increased in both with an extraordinary coincidence of equal ratio—unless, indeed, our northern capitalists are content with less profit than those of England, which will not readily be believed. What their precise gains have been, we have no certain data for estimating. They have always been seeking to enhance them by government protection, and, according to their own statements, have been carrying on a ruinous business. Yet they have amassed sufficient wealth to ape, at great expense, the style of the English grandees, and have won for themselves a title also—that of “lords of the loom and spinning jenny”—while manufacturing towns have been springing up at the North, and growing off, as if by magic, into cities. In the South a few factories have fairly got under way. They have had to struggle with the obstacles incident to every new business, and with prejudices, some of which I have glanced at. Experience has not demonstrated what profit can be regularly counted on, though it has been highly encouraging to all who have judiciously embarked in them. It is an important and well-ascertained fact, that, during the past year, the comparative increase of factory consumption has been greater in the southern states than in England, or elsewhere. And it is confidently believed, from the successful experiments which have been made, that, if all our natural advantages for manufacturing cotton were properly developed, under the social and political approbation of the state and the South, the profits arising from it would be so great, throughout the cotton region, as to attract abundant capital and skill from almost every other quarter.

England is the great dread of all those who turn their attention toward manufacturing. Her capital, her enterprise, her pauper labor, her vast commerce and indomitable energy, have hitherto broken down, or held in check, the cotton manufacturers of the old world. If they have thriven in this country, and kept pace with her in the ratio of increase, it may be said, with great truth and force, that thus far we have done little more than supply our home market with the coarser fabrics, and that a high protective duty has been deemed necessary to enable us to do this; that the only two foreign markets in which our manufacturers have attempted to contend seriously with her, pay for our goods in articles that enter the United States free of duty, which is equivalent to a direct bounty to our manufacturers, paid by our government; and that it yet remains to be shown, that we can compete with the English in the open and equal markets of the world. I do not believe that our northern manufacturers can ever do it, for reasons which time does not permit

me to detail. But it is believed that southern factories may with complete success. Whether they can or not, depends, of course—supposing capital and skill abundant—upon which can manufacture cheapest; for, transportation from our ports to foreign markets will be but little, if anything, more expensive than from her own.

The means of making a comparison between the cost of manufacturing cotton in England and this country, especially in the South, are not abundant, but we have some special facts in point, and a vast body of general ones that may be brought to bear directly on the question. A practical manufacturer, Mr. Montgomery, of Glasgow, who is now in this country, and who had previously written several treatises on cotton spinning, published at Glasgow, in 1840, a work on the comparative advantages of cotton manufacturing in Great Britain and the United States. It is regarded, I believe, as good authority on both sides of the water. In that work he estimates the cost of a factory in the United States, containing 5,000 spindles and 128 looms, at about \$104,000, including the buildings, motive power and all other machinery. The expense of working it a fortnight, he puts down at \$1,954. He exhibits the cost of a similar factory in England, which amounted to but \$44,000, and the charges per fortnight were only \$1,123. Notwithstanding this striking difference in the cost and charges of the two factories, on summing up and including the value of the goods produced, and the price of the raw material, Mr. Montgomery demonstrates that the final cost of manufacturing cotton is three per cent. in favor of this country. This important conclusion is owing to two items. First, the 128 looms here turned out 16,000 yards of cloth every fortnight more than the same number did in Great Britain; and, secondly, the charges on the raw material, from the southern seaport to the northern factory, were only eleven per cent., against twenty-seven and a half per cent., the charges to the British manufacturer. Supposing a southern factory to have been erected at the same cost as a northern, and worked at the same charges, the difference in our favor, inasmuch as the eleven per cent. expenses would be saved to us, would amount to nine per cent. over the British—an advantage, against which competition could not long be maintained in any equal market. Since Mr. Montgomery wrote, the English have abolished the duty on cotton, which he estimated at four and a half per cent. This placed them nearly on a footing with the North, but still left six per cent. in favor of the South. Since then, they have increased their speed in England, but it has been by an increased outlay for power. If they have reduced the cost of manufacturing, it has been by improvement in machinery, of which it is in our power to avail ourselves almost immediately. But in this

country, where the prices of numerous items used in a cotton factory have not yet, by any means, reached the minimum, the cost and charges of such an establishment as Mr. Montgomery describes, have fallen largely since 1840. According to Leonard's *Principia*, published last year, a factory running 5,000 spindles and 140 looms, may be put up at the North now twenty-five per cent. cheaper than Mr. Montgomery's estimate; can be worked at charges twelve and a half per cent. less, and will turn out ten per cent. more cloth. In addition to this, the average price of cotton has, for some years, been about half the price at which Mr. Montgomery's estimate was made, while charges have fallen very little, if any, and cannot now amount to less than an average of thirty-three and a half per cent. to the British manufacturer, notwithstanding the abolition of the duty. These facts seem to prove, that competition with England, in this line of manufactures, is not likely to turn out near so disastrous as we have been taught to believe by northern alarmists, deeply interested to spread such opinions in this country. They give us also some idea of the causes which have led to so rapid an increase latterly, in the consumption of raw cotton in America. The conclusion might be drawn that even the North may, in the long run, triumph over Great Britain. But our northern brethren have one, to mention only one, fatal and ominous disqualification for carrying such a contest to extremes. With them, owing to their social and political condition, the tendency of wages is constantly to rise. If they are lowered much, or lowered long, the security of property is at an end. They can substitute no labor for that which is virtually entitled to suffrage, and their governments, controlled by those who live by wages, have no power to protect capital against the demands of labor, however unjust. In the South it is wholly different; and so soon as experience shall enable us to handle our own resources skillfully, it will be found, besides, that we have as great advantages over the North and over England, in cheapness of motive power of all kinds, and in facilities for constructing buildings and machinery, as we have in the raw material to be manufactured.

The great item of cost in manufacturing, next to the raw material, is that of labor. And the final result of the great struggle, for the control and enjoyment of the most important industrial pursuit of the world, will probably depend on its comparative cheapness. We are forever told of the "pauper labor" of Europe, and for the reason I have just given, the North is, perhaps, excusable for never having been able to look with composure at this bugbear. The cheapness of labor is undoubtedly much influenced by density of population, though labor is dearer in Massachusetts, with a popula-

tion of one hundred, than it is in South Carolina, with a population of twenty-two, to the square mile. Ultimately, however, the value of labor must depend on climate and soil. Wherever men can work the most, and under a just and secure government live at least expense, there, in the long run, labor must be the cheapest. In England, factory labor is now limited by law to sixty hours a week. In our northern states, the average of available weekly labor is estimated at seventy-three and a half hours, in the middle states, at seventy-five and a half hours; and the further south we come, the more it is susceptible of increase. Cold, ice and snow, rarely present impediments to working in the cotton region, and the steady heat of our summers is not so prostrating as the short, but frequent and sudden, bursts of northern summers. If driven to that necessity, there is no doubt we can extend our hours of labor beyond any of our rivals. The necessary expenses of the southern laborer are not near so great as are those of one in northern latitudes. He does not require as much nor as costly clothing, nor as expensive lodgings, nor the same quantity of fuel, nor even an equal amount of food. All the fermented and distilled liquors which, in cold climates, are in some sort necessities, are here uncalled-for and injurious indulgences. Corn and bread and bacon, as much as the epicure may sneer at them, with fresh meat only occasionally, and a moderate use of garden vegetables, will, in this region at least, give to the laborer greater strength of muscle and constitution, enable him to undergo more fatigue, and insure him longer life and more enjoyment of it, than any other diet. And these, indeed, with coffee, constitute the habitual food of the great body of the southern people. Thirteen bushels of corn, worth now, even in the Atlantic southern states only about \$6 on the average, and one hundred and sixty pounds of bacon, or its equivalent, worth about \$9, is an ample yearly allowance for a grown person. Garden vegetables bear no price except in cities. If sugar and coffee be added, \$18, or at most, \$19, will cover the whole necessary annual cost of a full supply of wholesome and palatable food, purchased in the market. Such provisions, and in fact all sound provisions, are dearer in Europe and the North, than they are with us—much dearer than they could be well afforded here, if a steady and sufficient market gave encouragement to their production. It may, indeed, be safely estimated that each arable acre in the southern states can, with proper culture, maintain a human being, and that we might support within our limits at least 200,000,000, in a far better condition than the operatives and peasantry of Europe now are. Such are our vast prospects for the future. The precise

cost of maintaining a laboring man at the North, I have not seen stated. But there are abundant statements in England, not differing materially, for they have scientifically reduced the sustenance of their so much dreaded "pauper labor" to the exact point that will enable it to perform the allotted task. The Edinburgh Review, of 1842, stated that a gallon of flour per week, just half our allowance of corn, was indispensable, and the average price of that was estimated at eighteen pence. At this rate the British workman pays for bread alone, about \$18 50 a year, or full as much as will furnish here an ample supply of bread, meat, sugar and coffee. The prices of provisions cannot materially fall in England, for she is largely dependent on foreign supplies, and becoming daily more so; while here, even in South Carolina, with a certain market for corn at twenty-five cents a bushel at the barn, it would be cultivated, in preference to cotton at six cents in our ports. All these facts show that while wages have fallen already in Europe to the lowest possible point, we have a large margin left for their reduction here, should circumstances demand it, and that we have no reason to dread her "pauper labor" in the future. We have only to lift our mechanic arts from their present neglected condition, and learn to avail ourselves of the resources which Providence has lavished on us, to sweep over every obstacle which such labor may now present, to our immediate enjoyment of the entire monopoly of our own great staple. In fact, the average rate of factory wages in the South is already lower than at the North, and but little higher than it is in England. As soon as operatives can be trained here to take the places of those necessarily brought from a distance, at extra cost, to fill the higher departments of manufacturing establishments, the average of wages, and of all charges for working, will, of course, fall considerably. And let it not be forgotten that, as I have already stated, notwithstanding our almost entire want of experience, and all the disadvantages which our few and widely-scattered factories—newly erected among a people wholly unused to such pursuits—having no faith in them—in fact, strongly prejudiced against them—must, of course, labor under, they already produce better yarn and cloths, of the qualities attempted, than the northern manufacturers, and are successfully competing with them at their own doors. Mr. Leonard, in the recent work to which I have referred, states the cost of yard-wide No. 14 sheeting at 5.26 cents per yard, at northern factories, with cotton at 6 cents per pound there. The Graniteville factory, in this state, had not been in operation nine months, before it turned out precisely the same cloth, at 4.84

cents per yard, with cotton at *seven cents a pound here*. And these very goods, made at this establishment, at this rate, have recently taken the *first premium* at the exhibition in Philadelphia. Thus, in addition to sound theoretical reasoning, we have strong practical proofs to lead us to the conviction, that the cotton region is entirely competent to convert the whole cotton crop into goods of all descriptions, at a cost so low as to distance all competition. And the South has only to address herself earnestly to the great work to accomplish it, in a space of time that no one, not intimately acquainted with our people, would deem credible, if suggested now. Great Britain spins two-thirds of the amount of our cotton crop. It is estimated that she employs \$200,000,000 in the gigantic operation. On this data we may safely calculate that \$400,000,000 invested here would enable us to consume all the raw material we produce. These figures seem enormous, but they should not startle us. Within the last twenty years the South, while she has fallen off in no other branches of industry, has invested \$400,000,000 in cotton planting; \$50,000,000 in sugar planting, and not less than \$50,000,000 in factories and railroads. Why then should it be questioned that she could, in twenty years more, herself furnish the capital to manufacture all her cotton?

The immense benefits the South would derive from such a result, are not generally appreciated. Few have the remotest idea of them. Indeed, they would be so vast as to defy all previous calculation. "Little more than half a century has elapsed," said Mr. McCulloch, in 1833, "since the British cotton manufacture was in its infancy, and it now forms the principal business which is carried on in the country, affording an advantageous field for the accumulation and employment of millions and millions of capital, and of thousands upon thousands of workmen. The skill and genius by which these astonishing results have been achieved, have been one of the main sources of our power; they have contributed, in no common degree, to raise the British nation to the high and conspicuous place she now occupies. Nor is it too much to say, that it was the wealth and energy derived from the cotton manufacture, that bore us triumphantly through the late dreadful contest, at the same time that it gives us strength to sustain burdens that would have crushed our fathers, and could not be supported by any other people." If the manufacture of a portion of the raw material produced by our labor and our soil—and in 1833 she manufactured but a fourth of what we now produce—was of such incalculable advantage to England, what imagination can assign a limit to the power and prosperity we should enjoy, to

the height of grandeur we might attain, if we manfully put our sickles into the field, and reap for ourselves, by our own industry and enterprise, the whole harvest, which the cotton plant, the inestimable gift from Heaven to us, is capable of yielding ?

But to bring the subject more nearly home to ourselves, and our immediate interests, let us briefly consider what advantage South Carolina would derive from manufacturing the cotton she produces, and how far she is capable of doing it. The value of the cotton manufactures of Great Britain in 1846, an average year, was, according to the best authority, in round numbers, \$205,000,000. The quantity of raw material consumed was about 600,000,000 pounds, and the average price paid by the manufacturer is stated at ten cents per pound, which is equivalent, say to seven cents in this city. Now the average annual production of South Carolina is about 100,000,000 pounds, and if, to make our calculations clear, we assume that the whole of it was, as it might have been, manufactured in Great Britain, in 1848, the value of the fabrics made of our crop was, to the manufacturer there, one-sixth of the whole, or \$34,000,000. But we, in South Carolina, obtained only \$7,000,000 for it ; intermediate agents got about \$3,000,000, and the British manufacturer realized, for his share, \$24,000,000. These are not speculations or conjectures. They are recorded facts, which may be verified by reference to unquestionable documents. If we had manufactured our own crop in South Carolina, we should have received as the reward of our industry, in addition to the \$7,000,000 which we did realize, all of the \$24,000,000 which fell exclusively to the British manufacturer. If, looking to the future, we estimate the price of cotton in this city at six cents per pound, or \$6,000,000 for our whole crop, and reduce the value of it, when converted into goods, to \$20,000,000, clear of charges beyond this port, we shall still, by manufacturing it here, increase our net income by the immense sum of \$14,000,000 per annum. How would the failing industry of South Carolina recuperate under an increased annual expenditure of \$14,000,000 within her limits ? How would her cities grow, and new ones spring into existence ? How would her marshes be drained, and her river swamps be dyked in, until pestilence was driven from her land, and virgin fields of exhaustless fertility, conquered for her agriculture ? What rail-roads would be built along her thoroughfares, and what steamships would be launched upon her waters ? How many colleges, and schools, and charities, would be founded and endowed ? How would her strength be consolidated at home, and her influence abroad augmented and extended ? I am not conjuring up ideal visions to ex-

cite the imagination. All these things have been actually done. They have been, in our own times, and under our own eyes, carried out and made legible, living, self-multiplying and giant-growing FACTS in Old England and New-England ; and they have been mainly accomplished by the incalculable profits which their genius and enterprise have realized on the products of OUR LABOR. But the question will naturally be asked, can South Carolina manufacture 100,000,000 pounds of cotton ? Has she, without drawing from abroad, which is not desirable if it can be obviated—has she the capital, the motive powers of machinery, and the operatives, that will enable her to do it to advantage ? The answer is, yes ! and the truth of it may be demonstrated in a few words. To manufacture this amount of cotton, \$40,000,000 of capital would be an ample and liberal investment, that would cover all contingencies, if made judiciously. Now, for the want of profitable investment, a much larger amount of South Carolina capital has, within the last twenty years, actually left our state, and been lost to us forever. And that, without diminishing our agricultural productions, or foreign exports, which have increased considerably in quantity, if not in value, since 1830. I have already shown, that from 1830 to 1840, upwards of 80,000 slaves were carried from our state, and it may be assumed as certain, that full as many have gone within these last ten years. These 160,000 slaves, at \$400 each, were alone worth \$64,000,000. But for each one of these slaves, at the very least, \$100 worth of land and other property must have been sold here, and the cash proceeds transferred with them beyond our borders. This would amount to \$16,000,000 more. And if to this be added the \$10,000,000 which, made here by mercantile and other pursuits, has been sent elsewhere for investment, as has undoubtedly been done, we have, without computing interest, the immense sum of \$90,000,000, of which, within these last twenty years, South Carolina has been drained, in currents which still flow, and bid fair to flow deeper and broader every year. No one is to be blamed for the transfer of this vast amount of capital. No one is under obligation to make or keep unprofitable investments. It is not to be expected. It never will be done to any great extent by enlightened and enterprising men. But if we had embarked in manufactures twenty years ago, as successfully as others, and afforded to capital here returns of thirty, or twenty, or even ten per cent., not a dollar of that \$90,000,000 would have left the state. The slaves might have gone, and the lands they cultivated might have been sold—but the enterprising owners would have remained here, and the full cash equivalent of

this property would have remained with them. In their hands, it would not only have sufficed to erect all the factories requisite to spin our entire crop, but the vast overplus of \$50,000,000, would have constructed and paid for thousands of miles of rail-road, and built fleets of steamships and merchant vessels, sufficient to carry our augmented commerce in direct lines to all the great marts of the world. If we begin now, and, instead of removing, sell, for a time, the superfluous increase of our slaves, the proceeds, added to the floating capital otherwise accumulated, will enable us to accomplish all these objects in a much shorter period than twenty years, and bring in upon our state a flood-tide of prosperity, that will cover every hill and valley—every bog and barren—with deposits more valuable than those of California.

But if ample capital were supplied, have we in South Carolina sufficient water power, advantageously located, or can we, on reasonable terms, generate steam power to manufacture our whole crop? The immense pine forests which line our rail-roads and navigable streams, will, if judiciously managed, furnish fuel for all the factories we shall want, at \$1 25 a cord, for generations yet to come. At this rate, fuel can be supplied as cheaply as the best Cumberland coal, at \$3 a ton, or 12 cents a bushel, which is cheaper than the same quality of coal is furnished to the English factories. The cost of steam engines, enhanced now only by the charges of transportation, will be proportionably reduced as the mechanic arts advance, under the fostering spirit of manufactures and commerce. As to water power, without looking further, the sand-hill streams, which course through the pine barrens of our middle country—the healthiest region, take the year round, on the surface of the globe—are, it is well ascertained, capable of putting in motion millions of spindles and their complemented machinery—spindles enough to consume several times the amount of our crop. These streams fall from eight to fifty feet in the mile, are subject to no back water, or unmanageable freshets, and, being fed by perennial springs, are rarely affected seriously by drought. Innumerable mill sites, with large tracts of land, may now be purchased on them, at from fifty cents to a few dollars an acre. The building of factories on them would instantly enhance the value of other parts of a tract which might be sold, beyond the whole cost of the original purchase and expenditure for dams, so that ample water power may be obtained here for absolutely nothing. Four rivers navigable for steam-boats, and several others navigable for large craft, flow through this region to the sea, while three rail-roads already traverse it, and a fourth is partly under contract. The

cheapest transportation may therefore be commanded, and every necessary of life is proportionably cheap. Above the falls, the rivers themselves, and their numberless tributaries, afford an almost inexhaustible supply of water power, while provisions, at low rates, are abundant.

With capital, motive powers, cheap provisions, and convenient transportation at our command, it would only remain to obtain operatives, on fair terms, to render our capacity to manufacture our cotton crop, complete. For this purpose, about thirty-five thousand, of all ages, would be requisite. There is no question but that our slaves might, under competent overseers, become efficient and profitable operatives in our factories. It may be of much consequence to us, that this fact has been fully tested, and is well known and acknowledged, as it would give us, under all circumstances, a reliable source. But to take, as we should have to do, even three-fourths of the required number from our cotton fields, would reduce our crop at least one-third—a reduction that would seriously affect the great results we have in view. It would also enhance the prices of labor and provisions; not so much by the legitimate and profitable process of increasing the demand, as by diminishing the supply; and it would curtail the relative power of the agricultural class. If purchased by the factories—the only feasible plan of using them—their cost would add fifty per cent. to the capital required for manufacturing. While, in their appropriate sphere, the cultivation of our great staples, under a hot sun and arid miasma, that prostrates the white man, our negro slaves admit of no substitute, and may defy all competition, it is seriously doubted, whether their extensive and permanent employment in manufactures and mechanic arts, is consistent with safe and sound policy. Whenever a slave is made a mechanic, he is more than half freed, and soon becomes, as we too well know, and all history attests, with rare exceptions, the most corrupt and turbulent of his class. Wherever slavery has decayed, the first step in the progress of emancipation has been the elevation of the slaves to the rank of artisans and soldiers. This is the process through which slavery has receded, as the mechanic arts have advanced; and we have no reason to doubt, that the same causes will produce the same effects here. We have, however, abundant labor of another kind which, unable at low prices of agricultural produce to compete with slave labor, in that line, languishes for employment; and, as a necessary consequence, is working evil to both our social and political systems. This labor, if not quite so cheap directly, will be found in the long run, much the cheapest; since those who are capable of it, will, whether idle or employed,

inevitably, in one way or another, draw their support from the community. According to the best calculation, which, in the absence of statistic facts, can be made, it is believed, that of the three hundred thousand white inhabitants of South Carolina, there are not less than fifty thousand, whose industry, such as it is, and compensated as it is, is not, in the present condition of things, and does not promise to be hereafter, adequate to procure them, honestly, such a support as every white person in this country is, and feels himself entitled to. And this, next to emigration, is, perhaps, the heaviest of the weights that press upon the springs of our prosperity. Most of these now follow agricultural pursuits, in feeble, yet injurious competition with slave labor. Some, perhaps, not more from inclination, than from the want of due encouragement, can scarcely be said to work at all. They obtain a precarious subsistence, by occasional jobs, by hunting, by fishing, sometimes by plundering fields or folds, and too often by what is, in its effects, far worse—trading with slaves, and seducing them to plunder for their benefit. If the ancient philosopher had the slightest grounds for saying that it would require the plains of Babylon to support, in idleness, five thousand soldiers and their families, we may infer how enormous a tax it is on our resources, to maintain to the extent we do now, and are likely to have to do, directly and indirectly, our unemployed, or insufficiently employed poor.

From this class of our citizens, thirty-five thousand factory operatives may certainly be drawn, as rapidly as they may be called for, since boys and girls are required, in large proportion, for this business. Nor will there be any difficulty in obtaining them. Experience has shown that, contrary to general expectation, there exists no serious prejudice against such labor among our native citizens, and that they have been prompt to avail themselves, at moderate wages, of the opportunity it affords of making an honest and comfortable support, and decent provision for the future. The example thus set of continuous and systematic industry, among those to whom it has heretofore been unknown, cannot fail to produce the most beneficial effects, not only on their own class, but upon all the working classes of the state. And, putting aside the immense contribution of manufactures to the general prosperity, it would be one of the greatest benefits that could possibly be conferred on the agriculture of South Carolina, to convert thirty-five thousand of her unemployed or insufficiently compensated population into active and intelligent workmen, buying and paying for the products of her soil, which their families consume.

But it has been suggested, that white factory operatives in the South would constitute

a body hostile to our domestic institutions. If any such sentiments could take root among the poorer classes of our native citizens, more danger may be apprehended from them, in the present state of things, with the facilities they now possess and the difficulties they have now to encounter, than if they were brought together in factories, with constant employment and adequate remuneration. It is well known that the abolitionists of America and Europe are now making the most strenuous efforts to enlist them in their crusade, by encouraging the exclusive use of what is called "free labor cotton," and by inflammatory appeals to their pride and their supposed interests. But all apprehensions from this source are entirely imaginary. The poorest and humblest freeman of the South feels as sensibly, perhaps more sensibly than the wealthiest planter, the barrier which nature, as well as law, has erected between the white and black races, and would scorn as much to submit to the universal degradation which must follow, whenever it is broken down. Besides this, the factory operative could not fail to see here, what one would suppose he must see however distant from us, that the whole fabric of his own fortunes was based on our slave system, since it is only by slave labor that cotton ever has been, or ever can be, cheaply or extensively produced. Thus, not only from natural sentiment and training, but from convictions of self-interest, greatly strengthened by their new occupation, this class of our citizens might be relied on to sustain, as firmly and faithfully as any other, the social institutions of the South. The fact cannot be denied, that property is more secure in our slave states than it is at present in any other part of the world; and the constant and profitable employment of all classes among us will increase, rather than diminish that security.

There seems, then, to be no impediment whatever to our embarking, at once, in the manufacture of our cotton, and to the full extent of consuming our entire crop, in competition with the world. We have at hand, and within our grasp, all the elements necessary for erecting and carrying on manufacturing establishments; and we have the raw material on the spot, and at a cost one-third below our European, and one-eighth below what our northern, rivals are compelled to pay for it; and we have it, also, in far better condition. When it reaches our factories, it will not have been compressed—often not put in bales; it will not have been drenched in rains and rolled in the mud of wharves, nor bleached and rotted by exposure, in its long travels by land and sea. It must, therefore, necessarily, make smoother, stronger, and more durable fabrics, of all descriptions, here, than can be made of it elsewhere. And this is fully exemplified by the fact, that both

the factory in this city and that at Graniteville have, in the very first year of their operations, carried off the highest prizes at northern exhibitions.

The greatness of a nation mainly depends on the greatness of its natural advantages, and the use it makes of them. The highest gifts of heaven avail nothing—in fact, if profuse, they become curses—unless judiciously, skilfully and energetically appropriated. The wealth of England, which equals all that is fabled of the East, and the extent and power of her empire, are all due, in the first instance, chiefly to a wise and vigorous development of her natural resources. Surrounded by the ocean, commerce was evidently a vocation for her. Possessed of mines, in which coal and iron are interstratified, she was invited to manufactures. So soon as she had consolidated union and peace within her borders, she bent herself earnestly to these great pursuits, and devoted to them her genius, industry, and enterprise, until, at length, she has circled the globe in her giant arms—shakes every bearing tree on its surface, and draws into her lap the most precious fruits of all its climes. When the steam-engine and powerloom, the saw-gin and slave labor, combined to develop the greatest of all industrious pursuits, she was prepared to take the lead in it at once, and distance every competitor, to the present day; and McCulloch has exaggerated nothing, in estimating the value of this pursuit to her. Great as England was, sixty years ago, when she received the first bale of cotton from our shores, and much as she had done, her power and achievements before bear no comparison with what she has accomplished since, and is able to accomplish now. To speak only of her industrial operations: while all her manufactures have increased, even woollens, linens and silks, in spite of the substitution of cottons—and her annual production of iron has risen from one hundred thousand to a million of tons—her consumption of raw cotton has grown from some 15,000,000 lbs. to over 600,000,000 lbs. per annum, and the yarn and fabrics she makes of it exceed in value now all her other manufactures together. It is this unparalleled manufacture, thus seized and appropriated, that has finally made her commerce equal to that of all other nations, and London the sole centre of the exchanges of the world; while it has so stimulated her agriculture, that she would now be largely exporting provisions, if it had not also, notwithstanding her extraordinary wars in every quarter of the globe, and the millions she has lost by emigration, doubled her population in the last fifty years—an event which has never happened within a century before.

Yet this manufacture, whose astonishing results of every kind seem more like enchantment than reality—and in tracing whose ac-

tual history, we feel as if we were perusing some story of magic, in which fairies and genii make kings of peasants, and build gorgeous cities of marble and palaces of gold—this wonderful manufacture belongs of right to us. God, in his bounty, has manifestly designed it, and all for attendant benefits, for the people of the cotton-growing region. And he has given us, also, every physical advantage necessary to its full development. We have as much sea shore as England. We command the gulf, appropriately called the great "Heart of the Ocean," and through which, brushing our shores, in a few years more, almost the whole commerce of the globe will pass. We have coal and iron. We have, besides, immense forests and noble streams without number. We have capital and labor, and the raw material is peculiarly ours. It only remains for us to prove to the world, that we have the courage to claim our own, and the genius and energy to maintain the rights and secure the blessings which a kind Providence has bestowed upon us.

I trust it will not be supposed, that, while thus advocating the encouragement of the mechanic arts, and extensive manufacturing among us, I look upon them in any other light, than as means, not ends; or, that I regard them even as the highest means. A profound philosopher of antiquity has said, that "occupations of utility and necessity ultimately terminate in the pursuit of the beautiful and true." Of this there cannot be a doubt; nor that these occupations exercise a most important influence on the education, character and destiny of every individual and every community of men. Whoever is incapable of faithful and persevering industry is not capable of anything great. But the proper cultivation of the mind and morals must, in the main, be directed by a higher conception of the useful and the necessary, than would confine them to the mere exercise of any manual or mechanic art. And in training up a truly great people, no effort must be spared to enlarge all the faculties of the intellect, and to purify and elevate every sentiment of the heart. These are the springs and guides which finally sustain and direct all political, social and industrial institutions, and raise a nation to true prosperity and grandeur. But I see no incompatibility between the pursuits I have endeavored to recommend, and the exercise of the highest powers of the human mind, and the cultivation of the noblest sentiments that dignify our nature.

Nor would I be thought, by any means, desirous to see the mechanical and manufacturing spirit and influence prevail over the agricultural, in this state, or in the South. Of all the industrial pursuits of man, there is none so free from vicious contamination,

in all its relations and tendencies, as agriculture; none which, if properly conducted, requires closer observation of natural facts, more rigid analysis of causes and effects, or the exercise of higher powers of generalization; none better calculated to impress on man the duties of this life, and lift him to the habitual contemplation of another. Politically, it is nearly impossible that agriculturists can combine and act in concert, but on the basis of truth, of virtue, and of right. If they are slow to reform, they are conservative of all that is pure in every institution. It is, therefore, of the utmost importance in all governments—especially in one so democratic as our own—and in all social systems—especially where, as in ours, so much equality prevails—that the preponderating influence should be agricultural. And with its immense and necessarily permanent superiority in wealth and numbers, there should be no serious apprehension that any other interest can override it here. If that should happen, it would prove that the agriculturists were not true to themselves; that they no longer cherished those frugal and industrious habits, and that manly spirit, which are their appropriate characteristics; and that they neglected to cultivate those high and virtuous sentiments, and to imbibe for themselves, and instill into their children, that knowledge and love of knowledge, which constitute, after all, the only genuine sources of real and enduring power.—*Gov. Hammond.*

SOUTH—THE FUTURE OF THE.—The position which the Southern United States hold to the commercial and industrial world, is one of the most remarkable phenomena of modern times. When we reflect upon the origin of black servitude in America; its comparatively valueless results as long as Great Britain derived direct profit from the African trade; its sudden and wonderful change when, coeval with our national independence, it began to weave that thread of cotton which has gradually enveloped the commercial world, and bound the fortunes of American slaves so firmly to human progress, that civilization itself may also be said to depend upon the continual servitude of the blacks in America. With the independence of America ceased the profits which Liverpool and London had derived from the African slave-trade. Simultaneous with that loss of profit, the philanthropy of Wilberforce was awakened; and continued and persevering efforts were from that moment, through the space of half a century, made to bring about the enfranchisement of all black slaves. These efforts have been measurably successful with all countries where the number and importance of the blacks were inconsiderable. France and England afford nota-

ble examples of the folly of emancipating a race incapable of freedom; and the mind of the devout person who contemplates the condition of the *ci-devant* slave colonies of those two powers, must become impressed with the fact that Providence must have raised up those two examples of human folly for the express purpose of a lesson to these states, to save which from human errors it has, on more than one occasion, manifestly and directly interposed. It was doubtless the fact that, at the era of the Revolution, many of the southern states began to feel the burthen of unproductive slaves, and that a growing disposition to be clear of them manifested itself simultaneously with the mammon-prompted philanthropy of England. A great danger was thus springing up, when the inventions of the cotton-gin, the carding-machine, the spinning-jenny, and the steam-engine, combined to weave that network of cotton which formed an indissoluble cord, binding the black, who was threatened to be cast off, to human progress. It may be well, in this connection, to make a hasty sketch of the progress which black emancipation, under English tutelage, has made. The forcing of Africans upon these colonies by the English government, against the earnest remonstrances of the colonies, Virginia in particular, was a main reason in the list of grievances, why the authority of the crown should be thrown off. When this was accomplished, the discontinuance of the slave trade was decreed, and the traffic declared piracy by the United States. The English government followed this example, and the republican government of France emancipated suddenly the blacks of St. Domingo, giving over that fine island to the horrors of black civil war and plunder. From that time up to 1823, but little progress was made. In that year Mr. Buxton introduced a bill into Parliament for the abolition of slavery. Mr. Canning amended it on its passage, so as to prepare for gradual emancipation. Lord Bathurst notified the colonial legislature of the fact. This induced lively remonstrances on the part of the colonists, but these did not deter the government from taking those preliminary steps in 1831, which resulted in the bill presented by Lord Stanley in 1833, and which was adopted June 18, and sanctioned by the crown August 28, 1833. The principles of the bill were briefly these: After the 1st August, 1834, slavery ceased; all blacks above the age of six years became apprentices, under three heads—1st. Rural Apprentices, attached to the soil. 2nd. Rural Apprentices, unattached. 3rd. Non-Rural Apprentices. The two first classes were to work six years for their masters without pay, and the third class four years. The labor was limited to 45 hours per week. The blacks could buy

their time of apprenticeship of their masters, if they had the means. The power of punishment was transferred to the magistrates.

The compensation for the blacks was to be at the rate of their average value in each island, between the years 1822 to 1830. Thus the whole number of slaves was 780,993, and their value, £45,281,738. This sum was paid in full in cash and work. Thus $\frac{5}{7}$ ths in money, amounting to £20,000,000, and the remaining four-sevenths in the right to the work of the prædials six years without pay, and non-prædials four years. The number of claims was, for prædials attached, 5,562; do, unattached, 1,708; non-prædials, 9,075. The average valuation was £44 15s.; the average money paid for each slave, £19 15s. 4 $\frac{1}{2}$ d. The work of a slave generation in the West Indies was valued at 7 $\frac{1}{2}$ th years, and the years of apprenticeship assigned were considered four-sevenths of the pay.

Although the British government, with its usual self sufficient insolence, laid claim to the full merit of paying for the slaves, these had to contribute a large share of the remuneration for themselves. This arrangement, however, dissatisfied everybody. The slaves, who had hoped for immediate emancipation, were very impatient under this regulation, while the government agents so harassed the planters, that they were glad to sell out the time of the apprentices.

In Jamaica, from August, 1834, to August, 1839, \$300,000 were paid by apprentices to masters for unexpired time; and, finally, when the four years of non-prædial service had expired, the planters abandoned the remaining two years of the prædials, and August, 1839, was a day of jubilee.

The valuers then reported the number of prædials at 218,669; non-prædials, 37,144—total apprentices, 235,813. Free children, under six years, 38,399; aged, 15,656—total, 310,363, against 309,167 apprentices and 38,754 free children, returned in 1834; showing an increase of 145 children, and a decrease of 53,354 apprentices.

The first use of freedom was a prompt refusal to work at all; some demanded \$1, \$2, and \$3 per day, and the best authorities show that the islands are fast sinking back to a state of savage nature.

The productions of the island are yearly diminishing, notwithstanding an increased consumption of, and advance in the price of sugar in England. As the exports of the West Indies fall, the markets they afford for the sale of British goods become circumscribed. In 1836, they took £3,786,458 of British goods; in 1848, £1,434,477 only.

Simultaneously with their West India experiment, the British government exerted all its influence with the small nations of Europe to procure the nominal emancipation of such black slaves as were of no material importance, either to the several states, or to any

considerable interests in any of them. Those efforts which have been made by the English ministry to manufacture in Europe freedom for slaves, as they manufactured a claim against Greece, and a king for the Mosquitoes, by means of new clothes and old rum, serve only as a severe sarcasm upon the whole system of European governments.

All the nations of Europe, including England, contain absolute and miserable slaves, deluded with the name of freemen. Not the most advanced of these races has reached the degree of improvement, politically and physically, that marks the black race in the southern United States. From the nature of their geographical position, it results, that although most of the nations of Europe contain races whose life, liberty and property are at the mercy of masters, without appeal from their caprice, yet none of these are black. In the United States, none but black hold a subordinate position; hence no kind of slavery in Europe is bad except black.

In this view, the English government, after it set rum Sambo astride of a cask of Jamaica, with the style and title of King of the Mosquitoes, used its influence to induce the little piratical nations of Europe which possessed black slaves, to free them, and get their pay out of the skins of the white slaves. The Danish government followed the English example of turning slaves into apprentices without wages.

In 1846 the Swedish government paid \$50,000 to free the few blacks in the island of Saint Bartholomew, which amounted simply to turning adrift a few useless negroes. The most brilliant triumphs of this nature were, however, in Tunis, Egypt, and Bohemian Wallachia. In the last-named country, there is a population of 1,747,815 souls, including Goths, Gepidae, Huns, Lombards, Tartars, Turks, and Gipsies. These are all slaves, most abject and miserable, hardly above the savage condition—the women being compelled to do the labor, living in underground caverns, and using dry dung as fuel to cook a scanty meal. These poor creatures are owned by a nobility and clergy, who are exempted from taxes and the payment of private debts.

The most inconsiderable in numbers and lowest in the social scale, are the Gipsies, of whom there are about 150,000, owned by individuals and the government, the latter holding about 60,000. They pay 30 piastres, or \$2 10 per annum, per head, for the privilege of being at large, upon binding themselves not to quit the country. In 1846 the government was induced to waive its ownership of these poor creatures, who are but strolling vagabonds, and this "triumph of philanthropy" was proclaimed throughout Europe as a long stride towards universal freedom, and an example to the United States, although the slavery of all those not belonging directly to the government remains as before.

The next "grand triumph" of freedom was a successful negotiation, in 1847, with the Pacha of Egypt, for the release of his *black* slaves. The population of Egypt numbers 2,500,000; the larger proportion being Arab Egyptians, and are all the property of the Pacha. There is in Egypt no personal liberty whatever. The government claims and enforces its right to the labor of every man, willing or not willing; and no labor is performed unless under the immediate direction of the government officers, from whom alone the individual can procure supplies. Amidst this community, of slaves, there are Caucasian men and women, white slaves to the rich, and a few negro slaves brought from Nubia.

The English philanthropy had such an effect upon the Pacha as to induce him, March, 1847, to free the last named, allowing the rest to remain as before!

Soon after, similar influences began to work in the Barbary states, where the absolute dependence of all persons, in life, liberty and property, upon the nod of the Bey, makes life valueless to a man. The trade of these poor, creatures, who send three caravans a year into the interior, involves the bringing back occasionally a few negro slaves. As these were no particular benefit to the Bey, who owns the whole 2,500,000 people, he was induced by the English agent, for a small consideration, to follow the illustrious example of that ultra-democrat, the Pacha of Egypt, and alter the style of the servitude of those blacks, and Exeter Hall had another "triumph," and again the United States were bade to imitate the glorious example of the Mediterranean pirates.

The experience of the French government in its dealings with the black race, has been even more unfortunate than has been that of the English. The bloody disasters which overtook the once magnificent possession of St. Domingo, have, for more than half a century, remained a monument of black brutality. Taught somewhat by that lesson, the French government, in 1831, by a law of that year, provided for gradual emancipation in its remaining colonies.

Under the operation of that law, the number of slaves diminished from 294,481 to 258,956, in 1835. The productions of the islands were not, however, materially checked, and the system seemed to work well. The revolution of February, 1848, repeated the error towards the blacks committed by that of 1791, and slavery was suddenly abolished. That the same bloody results have not followed, is because the home government promptly laid the islands under martial law, as the only means of preserving the whites from massacre. The presence of a sufficient force is all that stays for the moment a war of races.

In relation to labor, the consequences are the same as in Jamaica, viz., a prompt abandonment of work at any price. In 1836, 4,932 hands produced in Martinique 6,056,990 lbs. of sugar, or one hhd. each; in 1849, the proceeds averaged one hhd. to 34 hands. The official returns of the French government for 1849, are not yet received; those, however, for 1847 and 1848, the last being the year of abolition, are as follows:

IMPORTS FROM AND EXPORTS TO THE WEST INDIA COLONIES FROM FRANCE.

	Imports	Exports	Total
1847.....	73,347,168.	39,954,084.	113,301,252
1848.....	35,992,153.	19,239,604.	55,231,757

Decrease....frs. 37,355,015..20,714,480.. 58,079,495

This shows a decline of more than one-half in the first year, and for 1849 it is greater, as indicated by customs returns. The sugar imported into France fell off one-half, and was made up by receipts of foreign slave sugar. The experience in relation to St. Domingo will be confirmed in the other islands.

We have thus stated roughly the course of abolitionism, in order to understand the lesson which it conveys. It is this. The black race has inhabited the African continent as long at least as the whites have occupied Europe, and the yellow and red races Asia. All these have more or less advanced from the rudest savage state, in manner and degree, according to their inherent intellectuality. The black race, however, has made no progress whatever. They were without invention, almost without language, and destitute of the faculties or the wish to advance. These beings, or such of them as had, by the fortune of internal wars, become the victims of their cannibal captors, were rescued from that fate to become the forced cultivators of the soil in the newly discovered countries of America.

A few years of that compulsory labor was supposed by the English government so to have changed their natures, that, made free, they would not resume the indolent and savage habits which had marked the race since the creation, but would become so perseveringly industrious for wages, as to enable their employers to compete with the slave owners of Cuba and Brazil, in supplying Europe with sugar, coffee and cotton; keep in employ one-fourth the people of Great Britain; maintain her merchant marine, and enable her to continue her commercial and manufacturing supremacy. The erroneousness of this view has, by experiment, now been proved to all the world.

The experiment has been sufficiently tested by emancipation, in the manner we have sketched, in the colonies of France and England, and by increase of free blacks among the whites of the United States; and it has been proved, beyond the possibility of a doubt, that the black race cannot even maintain the position to which they are raised by a few years of servitude, without continued coer-

tion. Left to themselves, they will not work, no matter how great may be the inducements or facilities, but sink back mentally to the dark superstitions of their cannibal natures. This truth has not only been demonstrated, but admitted by the best English authorities, even those which formerly were the most hopeful advocates of black equality. The policy of the English was, and continues to be, in relation to its West Indies, to cause them to be abandoned by the whites, and become entirely black colonies, in the sole possession of the descendants of slaves.

Already, however, the rapidly sinking condition of the colonies has convinced the thinking men of England, that the scheme is impossible; that to abandon them to the blacks, is to abandon them to worse than a state of nature; and means of retracing the unfortunate steps taken appear to be earnestly sought for.

In contemplating these facts, there presents itself this important consideration, viz., the four articles which are most necessary to modern civilization, sugar, coffee, cotton and tobacco, are products of compulsory black labor. Whenever coercion has been removed from that labor, its productions have ceased, and the experiments to prove this fact conclusively, have been made in localities where the results, although injurious to the experimenters, have not much affected the general interest of mankind.

England itself, at this moment, by a sort of retribution, is in some sort the slave of southern blacks. She it was that created American black slavery, and her existence has now come to depend upon its products. There are few persons who reflect upon the immense superstructure of wealth and power which is reared upon the foundation of the American slave culture of cotton. The United States trade is almost altogether based upon that industry. Although the cotton manufactures are made at the North, they are based upon slave labor. Some approximation may be arrived at, taking the last year, 1850.

EXPORTS FROM THE UNITED STATES, 1850.

	Southern produce exported	Value of whole production
Cotton, raw.....	71,984,616.....	\$105,600,000
“ manufactures.....	4,734,424.....	100,000,000
Tobacco.....	9,951,223.....	15,000,000
Rice.....	2,631,557.....	3,000,000
Naval stores.....	1,142,713.....	2,000,000
Sugar.....	23,037.....	12,396,150
Hemp.....	5,633.....	695,840
Provisions from New- Orleans.....	3,523,809.....	138,591,990
And other articles from the South.....	6,000,000	
Total.....	99,997,012	
Northern and Western exports.....	34,903,221	
Total exports.....	134,900,233	

Under the head of “other articles from the South,” are embraced corn and flour from Virginia, manufactured tobacco, snuff, and there might also be included gold to the extent of \$1,000,000 per annum; but we have not included gold in the exports. The provisions from New-Orleans embrace flour, pork, bacon, lard, beef and corn, exported to foreign ports direct from New-Orleans, and which are purchased from the north-western country for sugar, tobacco and cotton sent up the river, an operation equivalent to an annual export of those articles. The value is thus given in the New-Orleans price current, and it will be observed that the whole amount exported from the Union of these articles is \$19,146,658, consequently one-fifth of the whole export of farm produce goes from New-Orleans. It is thus apparent that 75 per cent. of the exports of the Union are the product of slave labor in northern ships, and that consequently, as the imports of the country are paid for in the exports, 75 per cent. of the importations are the remuneration for the product of slave labor. Inasmuch as that the whole exports and imports of the country, taken together, are derived 75 per cent. from the slave labor, the same ratio of freight is derived by the shipping, which is owned as follows:

UNITED STATES TONNAGE.

Owned	Registered	Enrolled	Total 1848.	Total 1850	Increase
South.....	159,956.....	334,845.....	494,797.....	743,805.....	249,008
North.....	1,201,930.....	1,456,314.....	2,658,244.....	2,791,649.....	133,405
Total.....	1,361,886.....	1,791,159.....	3,153,041.....	3,535,454.....	482,413

The registered tonnage is that engaged in the foreign trade, and the enrolled that of the coasting trade. Although much the largest portion is owned at the North, the result of the comparison is, that the increase to the South in the last two years has been double that of the North, and, moreover, that increase of the South has been 50 per cent. of what was owned in that section in 1848,

a marked step in advance. According to the official returns, the 2,700,000 tons of the United States ships engaged in foreign trade, make one voyage in a year; that is to say, two passages, one out and one home. The freights will average \$12 per ton each way; this gives \$64,800,000 freights earned in a year, of which \$48,600,000 is earned by northern ship-owners by carrying slave pro-

ducts and their proceeds. The coasting transportation of southern products by northern vessels will give \$7,000,000, making \$55,600,000 earned by the ship-owners. To earn this money, it requires that ships should be built, and the census return for 1840 showed the value of ships built in the Union for that year to be \$7,016,094; and as the Treasury Reports showed the tonnage built in that year to be 120,988, which gives an average of \$55 per ton, the census was probably correct. Of the \$7,016,094, less than \$300,000 was in slave states; all the rest was expended at the North among all those who live by that manufacturing, lumber-men who float the monarchs of the forest to the seaboard for the shipwrights to fashion, architects, shipwrights, blacksmiths, sheathers, caulkers, riggers, cordage and sailmakers, with their backers, the hemp and flax growers, and canvas weavers. Thus affording immense employment to busy ship-yards, until the ship "a taunto" has passed the hands of cabinet makers and upholsterers, and is ready for her cargo, which employs gangs of stevedores, cartmen, shopmen and clerks, with premiums to insurance offices, until, her shipping articles complete, under the command of a thriving pilot, 20 stout seamen, whose families are provided with "draw bills" for their wages, sheet home her canvas to the breeze, and she seeks in foreign climes a profit upon her southern cargo, to remunerate the outlay of capital that has created her and given activity to so many interests.

The privilege which the northern states have thus enjoyed in being free carriers for southern produce to Europe, as well as of bringing it to their own water-courses for conversion into goods to be re-carried to the South, and sold at a profit above the cost of the raw material, with freights, insurance, exchange, commissions and wages superadded, has formed the marked distinction which is manifested between the present condition of New-England and Canada. Why is it that the latter, possessed* of English enterprise and capital, and endowed with large expenditures on such public works as the Welland and Rideau canals, are impoverished, idle and retrograding, while New-England is advancing with rapid strides to wealth and power? Clearly because the latter enjoys freely the right to carry and manufacture the products of slave-labor, from which Canada is excluded. This fact, and the fear of being deprived of the privilege involved, has excited much interest of late in New-England; and C. Haskett Derby, Esq., a well-known factory and rail-road speculator, undertook, in the last October number of Hunt's Magazine, to reply to the able pamphlet entitled, the "Union, and how to save it," and published in Charleston. Mr. Der-

by's reply had very little force, and we refer to it here merely as an illustration of a single point. The pamphlet showed, that as the exports of the country are mostly from the South, the proceeds returning in shape of goods belong to the section whence emanated the means of paying for them, and the duties exacted from these goods were therefore taken from the South. Mr. Derby remarks:

"Let us examine his theories as to duties. It is a very simple one. Not that the South has directly paid such duties, for they have been paid principally at the North; but the whole theory rests upon the fact that the duties are paid on imports; that the South supplies nearly two-thirds the exports of the Union; and the duty being levied on the proceeds, are paid *not by the consumer*, but by the South."

This is slightly misstated; the South is both the consumer of the goods and producer of the means of paying for them. Again, says Mr. Derby:

"Take a case in point. A New-England ship sails for Charleston with a cargo of granite, ice, fish, and manufactures. She exchanges them for lumber, rice and cotton. She then sails for Liverpool, makes freight and profit; then to Cardiff, where the proceeds are invested in slate or iron, and returns to Boston. What has the South to do with these imports? They have been bought by the North and paid for—how do 'they belong to,' and how are they 'to be divided among the producers of the exports?'"

The question is not of a few stones, a little ice, and a few fish, but of that large amount combined in the last enumerated word, "manufactures," and which Mr. Derby slurs over so glibly. Now the robbery consists precisely in that operation. The "manufactures" which this New-England ship carries to Charleston, as the means of buying cotton, are raised in value 30 per cent. by the present tariff, and by the old tariff 80 per cent.; that is to say, Liverpool being the largest market, regulates the price of cotton. Fair cotton is now fourteen cents, and certain Lowell sheetings 7 cents per yard; that is to say, two yards of the latter are given for one pound of cotton. But the English will give three yards for one pound. The tariff says, no; and the government, for every three yards imported, takes one. It is not only the duties upon the articles actually imported, of which the South pays so large a share, but upon a corresponding advance caused by the duty upon all northern manufactured articles; that is to say, one-third of all the produce sold by the South to the North, and paid for in manufactured goods, is confiscated to the use of the manufacturers. Mr. Derby makes the following very strange assertion:

"But does the slave use the costly linens, silks, woolens, liquors, coffee, sugar, tea, and other valuables from abroad? Clad in coarse attire, eating his coarser fare, he little knows of such luxuries. Our imports now average at least ninety dollars per head for our white population. The slave

cannot average one-third of this amount. The great consumers are the whites, both southern and northern.

"Let us allow for this difference, and the consumption of foreign imports in the slave states will fall below three-tenths of the entire importation. The slave states will consequently be found to pay less than three-tenths of the entire duties,—less than their ratio under the Constitution."

The white population of the Union, by the present census, will be about 17,000,000. "Ninety dollars per head" would give for imports \$1,530,000,000, say one thousand five hundred and thirty millions. The actual imports are \$163,000,000. So much for his accuracy of calculation. But, says he, the imports are luxuries which slaves don't use. We cannot see how that alters the fact. If by means of a high tariff the northern manufacturer obtains one third of the southern produce for nothing, he may, of course, buy luxuries, or, as we have lately seen done, buy the office of minister to England, and become the toady of dukes, or indulge his taste in any way. Let us take an illustration from the Massachusetts census.

NUMBER OF COTTON AND WOOLEN FACTORIES, SPINDLES AND LOOMS IN MASSACHUSETTS.

	Cotton.		Woollen.	
	Factories	Spindles	Factories	Spindles
1840.....	275.....	624,540.....	144.....	113,457.....
1850.....	337.....	1,220,752.....	191.....	208,648.....

It appears that the number of spindles has doubled, consequently the consumption of cotton has doubled, and of wool the increase has been 80 per cent. The capital invested in cotton has risen from \$17,414,079 to \$35,000,000, and the persons employed from 21,000 to 35,000. The South has had to pay the North 30 per cent. more for woollen as for other goods, than they would have been furnished for by the other customers for rice, cotton and tobacco; and it is the operation of this tribute which has caused the factories to double in ten years. Of the chief staples of the South, the productions, exports and home consumption of the last year have been nearly as follows :

	Exported	Home Consumption	Total Production
Cotton.....	71,984,616..	33,615,388..	105,600,000
Tobacco.....	9,951,223..	5,048,777..	15,000,000
Rice.....	2,631,887..	400,000..	3,031,557
Naval stores....	1,142,713..	800,000..	1,942,713
Sugar.....	23,037..	12,396,150..	12,419,147
Hemp.....	5,633..	690,207..	695,840
Total.....	\$85,738,779..	\$2,950,520..	138,689,297

The largest portion of this home consumption has been exchanged with the North and West; with the latter on equal terms, receiving breadstuffs, provisions, &c., in exchange. With the North there has been received merchandise, enhanced one-third in value by the operation of the tariff, or, as Mr. Derby expresses it, that produce has been purchased by the North in exchange for manufactures. The southern produce was given at its cash value in the markets of the

world, while the manufactures of the North were taken at a fictitious value, created by the operation of the tariff. If, after purchasing on such terms, the northern merchant chooses to export that produce, Mr. Derby asserts the South has not been fleeced, because the identical articles brought back do not go to the individual planters. To illustrate: Suppose fair cotton is twelve cents per lb., regulated by the cash price in Liverpool, and that for one lb. of such cotton the Manchester man will give three yards of a certain description of cloth, valued at eight cents. A New-England manufacturer asks twelve cents for the same cloth, and gets it, because Congress imposes four cents per yard on the Manchester cloth. The northern merchant then sends two yards of cloth, and obtains one lb. of cotton; he then sends abroad the cotton and buys silk with it. Mr. Derby says the South has nothing to do with this luxury! Yet the trade is based upon the southern product, which has been obtained by the North, under the operation of the tariff, cheaper than it otherwise could have been. In the same manner, a vast northern capital operates upon the same bases. We have seen that the shipping is mostly owned at the North, and draws its revenue from the southern freights at an average of \$40 per ton. The northern shipping is worth \$111,665,960. The capital invested in commercial houses is \$81,000,000, including dry goods and tobacco-shops; in cotton factories, \$105,000,000; in machine-making and other trades incident to factories, \$2,000,000; in rail-roads dependent upon factory prosperity, \$30,000,000. These items make together \$329,665,960 of capital employed at the North, which depends altogether upon slave labor, and which would be annihilated and valueless in the event of emancipation, as was the property of the West Indies. Large as is this northern interest in the United States dependent upon slave labor, it is far inferior to the British interest, also dependent upon slaves. One-half of the whole external trade of Great Britain is dependent upon cotton. Thus, the declared value of cotton goods exported in 1849 was £26,890,794, say \$130,000,000; and the whole export was £58,848,042, say \$290,000,000. The cotton goods manufactured constituting so large a portion of the exports, of course the imports of which, raw cotton, was £12,838,850, or \$54,000,000, purchased with those goods, are dependent upon the same basis. The immense shipping interest also derives its support from the same source. The amount of British capital directly invested in cotton is, by the best authorities, given as follows :

Capital employed in—

The purchase of raw material.....	£12,838,850
Wages of operatives.....	12,000,000
Hand-loom weavers.....	7,000,000
Mills, looms, &c.....	35,000,000

Total.....£66,838,850
Or in United States money.....\$320,826,400

The number of factory operatives and handloom weavers and bleachers, 1,300,000, and the number of persons dependent on the manufacture, 2,200,000. If we add to the capital directly invested in cotton the property which depends upon it in a collateral manner, the result is not far from \$700,000,000, and on the continent, \$200,000,000, making, probably, \$1,230,000,000 of property, with 7,000,000 of people, which depend for their existence upon keeping employed the 3,000,000 negroes in the southern states. When we reflect upon the vastness of this industrial fabric, reared upon the frail foundation of black labor, and find persons rashly meddling with the only incentive to that labor, the most stupendous example of human folly presents itself.

The time is, however, rapidly approaching, when the South and West will manufacture the greatest proportion of their own raw products; and that large shipping interest in Europe and the North which depends upon the transport of the raw products, will find itself confined to the carrying of goods; while the markets of the world will come to depend upon the Mississippi valley for wrought fabrics, as they have hitherto done for the raw material. New-Orleans may become the Liverpool of America, communicating by the father of waters with that vast region which is to be the Manchester of the world.

The essential difference between the position of the cotton manufactures in the United States and Great Britain may be illustrated by a few figures. The consumption in the United States last year was given at 595,269 bales, say 238,107,600 lbs., which is very nearly the quantity which Great Britain manufactured in 1827, that was 249,804,396 lbs. The difference is in the quantities consumed at home, and this is indicated in the value exported as follows:

CONSUMPTION OF COTTON AND VALUE OF FABRICS
EXPORTED IN UNITED STATES AND GREAT BRITAIN.

	Cotton, lbs	Value	Value of Cotton Goods exported
G. B., 1827	249,804,396	\$34,972,615	\$84,658,382
U. S., 1850	238,107,600	26,787,105	4,734,424

Thus it appears that the consumption of cotton goods in England was very small, almost the whole of the manufacture was exported. In the United States, last year, an equal quantity was manufactured, and more than the whole of it consumed, because a considerable quantity was imported in addition. This is an important difference. The English manufacture had grown up during a war, and when there were no manufactures in any other nation; she had the supply of the world, but not the means of consuming herself. Since then, manufactures all over the world have sprung up, and the United States have built up and supplied a market at home equal to the whole English manu-

facture for the world in 1827. The American market has, however, become glutted by home competition. The following figures give the cotton consumed in the United States at three periods:

CONSUMPTION OF COTTON PER HEAD IN THE
UNITED STATES.

	Cotton, lbs	Population	Cotton, per head, equal to yards
1830	50,804,800	12,866,020	4 lbs. 12
1840	118,357,200	17,069,453	7 " 21
1850	238,107,600	22,000,000	10¾ " 32½

Such has been the progress of cotton manufacture and consumption in this country for twenty years! It has increased from 12 to 32½ yards each for a population that has increased 10,000,000, or nearly doubled. In a late English return, the weight of cotton spun in 1849, in England, is given at 626,710,660 lbs.; net weight of yarn, 558,163,700 lbs.; weight of yarn exported in goods and yarn, 421,742,935 lbs.; weight consumed at home, 136,420,765. This, among a population of 31,000,000, gives an average of 4½ lbs. each, or 13½ yards, being over 19 yards per head less than the United States consumption. These figures show, in a most remarkable degree, not only the superior condition of the people of the United States, but the over-wrought state of the cotton manufacture, which is now in a depressed state, yet cannot compete with England by exporting to neutral markets, because the scale of production has been under a system of protection which forbids sales on a fair footing with English goods.

It is evident, from the primary fact that a large portion of the industrial prosperity of both Old and New England depends upon a staple drawn from the southern states of America, that the seat of manufactures has occupied a wrong locality—that is to say, it has, in relation to facility of production, occupied a position disadvantageously situated when purely economical principles are taken into account. For the most ready productions of manufactured goods, it is necessary that all the materials of which they are composed should be found, together with the motive power, in neighborhoods capable of producing the best and cheapest food for the support of the operatives, and that all these circumstances should exist, and be easily accessible. It has, however, hitherto never been the case that all these means have been combined in any one locality. England has possessed the most of them, and, in the earlier years of her progress, sufficient to supply her demands. Her geographical position is such, surrounded by the ocean, that no wind can blow from any quarter of the compass without favoring her commerce. From which point soever the breeze proceeds, it is fair for the arrival of some of her ships, and for the departure of others. This facility of communication before the age of

steam, gave her immense advantages, as it made her ports the depot for the raw produce of all countries, and the source whence, after being wrought up by English industry, goods were derived by all nations. With such advantages, the business of England could not but increase, until the demands of her operatives for food and raw materials exceeded the capacity of her own soil to supply them. The cost of these things to consumers would then naturally be enhanced by the cost of transportation and duties on the additional quantities imported, and thus an enhanced cost was occasioned at a moment when the competition of foreigners reduced the price of the fabrics. The mere fact of a larger transportation of raw produce was regarded as a good, in a political view, inasmuch as that, by employing more shipping, it fostered that navy on which England depended; but if that cost carried prices beyond the point at which foreigners could compete, it defeated its own object. The government, therefore, removed duties on raw produce, on food, and finally abolished the navigation laws, in order that all those things might be supplied in England at cheaper rates. The virtual effect of these measures was to extend the breadth of English soil, because they placed at the command of her people the products of vast tracts of land in other regions. Gradually, however, the countries which produced the most of those raw products, came to work them up into goods, and by this competition

to reduce the prices of fabrics; and the English returns show that, while the quantities of food and raw material imported were immensely increased, the value of goods made from them was not increased. In the year 1842, the policy of admitting food and raw materials began to be adopted; we have compiled a table of the progress of the country since that year. In this connection it may be well to allude to the financial difficulties of the English government which led to this change. For many years prior to 1842 the revenue was deficient, and every means had been adopted to swell the amount. In 1840, the Chancellor, Mr. Baring, had caused to be imposed an additional duty of five per cent. upon all imports. By his calculation that amount would cover the deficit. The result was the reverse. The customs, after the imposition of the five per cent., did not yield so much as before. The ministry changed, and Sir Robert Peel's principle was adopted. This was by remitting duties to promote a larger consumption of the taxed articles, and, by so doing, to enable the people to pay. Since that time, duties, amounting to nearly £11,000,000, say \$50,000,000, have been remitted, and the aggregate customs' revenue has increased \$10,000,000.

In order to show the details of which the table is composed, we annex the following, showing the actual quantities of food and leading raw materials imported for consumption in 1836, and for the last three years:

QUANTITIES OF FOOD AND RAW MATERIALS IMPORTED INTO GREAT BRITAIN.

	1836	1847	1848	1849	1850, 8 ms. to Sept. 5.
Animals.....No.....	none.	219,679	203,440	185,235	98,742
Hams.....cwt.....	none.	17,203	7,717	12,282	9,346
Bacon.....".....	1,433	90,530	211,315	384,325	295,040
Beef.....".....	1,222	112,683	144,857	144,638	105,918
Butter.....".....	143,149	314,126	294,427	282,501	211,239
Cheese.....".....	134,643	354,802	441,635	397,648	208,592
Rice.....".....	98,227	1,560,402	996,372	925,316	320,504
Pork.....".....	29	235,798	254,070	347,352	181,170
Sugar.....".....	3,856,562	8,209,527	6,869,931	6,925,851	4,206,764
Molasses.....".....	622,479	949,823	517,534	1,062,661	590,510
Tallow.....".....	1,005,276	1,099,275	1,498,359	1,468,719	161,733
Lard.....".....			342,040	185,838	215,088
Total....".....	5,863,020	18,944,168	11,547,757	12,187,136	6,506,106
Cocoa.....lbs.....	1,084,170	5,716,375	6,442,986	7,769,234	1,963,129
Coffee.....".....	23,275,041	37,472,153	37,153,450	34,431,506	20,967,150
Pepper.....".....	2,359,573	2,967,000	3,125,545	3,296,079	1,906,734
Tea.....".....	36,574,004	46,326,582	47,774,755	53,460,751	34,334,900
Tobacco.....".....	21,803,775	26,545,020	27,098,314	27,488,621	18,109,321
Pimento.....".....	344,458	1,366,625	2,338,200	3,881,800	21,500
Total....".....	85,461,026	120,391,755	123,933,250	129,327,991	177,596,234
Flour and Grain in quarters.....	420,024	12,303,751	6,327,244	11,882,900	6,089,098
Cotton.....".....	326,407,692	486,951,800	717,443,100	758,841,600	485,877,200
Wool.....".....	42,718,514	62,592,598	69,343,477	75,100,883	55,350,864
Silk.....".....	5,658,211	5,603,915	9,593,724	7,021,761	4,981,676
Hemp.....".....	72,352,200	91,301,100	95,177,100	119,127,300	55,137,040
Flax.....".....	81,916,100	118,460,012	164,666,100	203,009,900	114,102,675
Total....".....	531,237,896	764,849,425	1,053,321,701	1,163,092,444	715,469,451

If we now take the cwts. and lbs. together in lbs. for each year, we have results as follows:

	Animals, No.	Flour and grain in quarters.	Food, lbs.	Raw Materials, lbs.
1836	none	420,024	772,275,871	670,868,216
1842	5,340	2,572,620	775,971,593	732,507,490
1843	2,100	1,379,290	599,362,269	884,287,381
1844	8,008	2,780,392	843,214,168	922,924,124
1845	28,675	1,308,260	948,615,050	1,038,859,643
1846	122,458	4,056,414	961,234,984	741,607,365
1847	219,679	12,303,751	1,576,810,655	764,819,325
1848	203,440	6,327,224	1,433,305,932	1,053,221,501
1849	185,235	11,882,900	1,490,480,220	1,163,092,444

This increase of food and raw materials imported for the use of English operatives is almost incredible. The dye stuffs, of which the weight for 1849 was 185,249,650 lbs., are not concluded. If we estimate the cost of transportation at the simple freight now current, it will give a high figure. Freights are

now very low—a bushel of grain is carried from New-York to England for 10 cents, and 3 lbs. of cotton for one cent. If we take these two figures as the average for all the freights, it will be far within the mark; the cost will then stand as follows:

	Quarters, Grain.	Freight, Dollars.	Food and Materials, lbs.	Freight, Dollars.	Total Freight.
1842	2,582,620	2,058,096	1,511,479,083	5,038,268	7,696,359
1844	2,280,392	2,224,314	1,766,138,292	5,687,127	8,110,441
1849	11,882,900	9,506,320	2,653,672,672	8,345,242	17,851,562

If we now compare these freights with the declared value of textile fabrics, we have results as follows:

	1842	1844	1849
Freights	\$7,096,369	\$8,111,541	\$17,831,562
Value Exports	\$150,765,298	\$190,925,705	\$193,991,780

As compared with 1844, the amount of freights has increased \$9,700,000, while the value of the goods has risen but \$3,000,000. Thus, without taking into account the price of the articles, the freight account is 6,700,000 or 3½ per cent. against the English manufacturer; and that difference, as seen in the table, is constantly increasing. The effect of the famine year, 1847, was to enhance the import of food and diminish that of raw materials, since when both items are more than ever.

It is now very apparent, from the general principles evolved in these tables, that England cannot continue to increase her demands for food and materials brought from a distance, and compete with those countries which have all these things within themselves, and with which the freight amount is nothing. What a strange absurdity it is to see silk going from China and France; cotton from the southern United States; wool from Australia; coffee and sugar from Brazil; wheat from New-York, Michigan, Odessa and Poland; hemp and flax from St. Petersburg; pork and lard from Ohio and Illinois, all concentrating in Lancashire, to be returned in the shape of goods to the localities whence they came! Such a state of things never could have been brought about but for the geographical position of England giving her control of the ocean. The progress of internal improvements making land carriage equally favorable with that by water, has developed regions like the valley of the Mississippi, where all those articles which the marine of England seeks in every section of

the world, exist together, of the best qualities and in limitless abundance; land and its produce, raw materials and motive power, lie in juxtaposition, and goods can there be turned out in such a manner that England's freight account alone will be a prodigious profit to the manufacturer.

The position of New-England is very similar to that of old England. We find coal and iron going thither from Pennsylvania; sugar, cotton, pork and flour, from New-Orleans; wool and food from Illinois and Wisconsin, to be sent back in the shape of goods. It was the water-power and industry of New-England that made the cost of transportation light; but improvements in steam machinery has made power "locomotive," and motive power is now existent in the midst of those materials which nature has with such prodigality bestowed upon the South, and the blacks are equally serviceable in factories as in fields. There are conditions which shadow forth the greatness and power of the South, and as she rises in power and wealth she will elevate the black race with her. She will have, however, to encounter the jealous hatred of rivals whose philanthropy will be developed as her prosperity increases. It is, however, through the long lesson of industry taught by white surveillance, that the great work of regenerating the black race can be accomplished.—*T. P. Kettell.*

SOUTHERN INDUSTRY.—It has become very apparent within the last fifteen years, that the leading object of southern industry is far less productive than it was in the infancy of the cotton culture; that is to say, the average prices of cotton have not been maintained, even although the production has not largely increased since 1840. This diminished value of production appears to be progressive, growing out of causes

which have developed themselves in the thirty-five years of peace which the world at large has enjoyed since 1815. In all that time, communication with distant countries has been multiplied, new sources of supply and demand have been opened, and great as has been the improvement in the demand for those articles which constitute the mate-

rials of manufacturing industry, the raw materials have been supplied in greater abundance, causing a continued fall in the values of each. Taking England as the workshop of the world, we may construct a table of raw materials imported from time to time.

IMPORTS RAW MATERIALS INTO ENGLAND.

	Hemp	Flax	Silk	Wool	Total lbs.	Cotton
1835	72,352,200	81,916,100	4,027,649	41,718,514	196,013,963	326,407,692
1840	82,971,700	139,301,600	3,860,980	50,002,976	276,137,356	531,197,817
1845	103,416,400	159,562,300	4,058,737	59,813,855	325,851,292	682,107,700
1850	117,971,100	204,928,700	4,942,417	72,674,483	400,516,700	714,502,600
1851, 10 mos.	117,504,000	98,645,300	3,863,651	69,924,106	290,637,556	666,223,760

Thus each of the five great materials of textile fabrics was greatly increased in supply, and some of them in a greater proportion even than cotton. From 1835 to 1850 the last rather more than doubled in quantity, that is to say, in the last year the import was 388 millions pounds greater than in 1835. So, also, of the four articles, the import was 204 millions pounds greater. It will be

observed, that this is only the increased receipt of raw materials into the workshops of England. Those of the continent have received similarly increased quantities. Now, if we compare the quantities of those articles which England has derived from the United States in each year, we have results as follows:

	Cotton export U. S. to G. B.	G. B. import cotton, lbs.	Four other articles, lbs.	Total import, raw material, lbs.
1835	270,084,400	326,407,692	196,013,963	522,421,655
1840	494,915,090	531,197,817	276,137,856	807,335,073
1845	605,144,686	682,107,200	325,851,292	1,007,958,992
1850	431,531,091	714,502,600	400,516,700	1,115,009,390
1851	—	666,223,760	290,537,056	956,760,816

In 1835 the United States furnished one-half of the raw material of English manufacture; in 1850, about one-third only. Notwithstanding the continued fall in prices, other raw materials work more and more into fabrics which but a short time since were exclusively cotton, and the same operation apparent in this table of English consumption manifests itself also in all the markets of the continent, as well as in the United States. Through its means, the profits of the cotton culture are materially reduced, as also are the profits of English manufactures under general competition.

It will be observed of three principal materials, silk, cotton, and wool, that the events of the last quarter of a century have tended to promote supply more particularly in the last ten years, in which time the Chinese trade has been brought into greater regularity in supplying silk, and Australia has become the great wool country, while the United States cotton power has been eminently developed. In the same period, also, the industry of Russia has received a more intelligent development, supplying greater quantities of hemp and flax at cheaper rates. All these sources have enhanced the supply of raw material for textile fabrics fifty per cent. in ten years, and, perhaps, somewhat faster than the demand for the goods produced would take them up. The influence of one material upon the other has been con-

tinually made more effective by the ingenious combinations of the cheapest among them into the new fabrics. Thus, fabrics of silk and wool, wool and cotton, silk and cotton, silk, cotton and wool, have all assumed different textures and different proportions of each material, according to the relative cheapness of each; consequently, the price of any one has always been checked by that of the others, and the value of all has been influenced by collateral circumstances. Thus, the strange operations of the so-called republican government of France, in 1848, injured the trade of the world. The genius of republicanism is individual, state and national independence; the intelligent and self-dependent exercise of the individual faculties make up the sum of a nation's prosperity. The great evils which overtake France and the other countries in Europe flow from centralization. The government, by means of taxes, absorbs the sum of the nation's earnings into the national treasury, and disburses it thence in the support of officers, cliques, and interests. It was supposed that when the revolution took place, that this state of things would be done away with; that the onerous taxes under which the people groaned would be remitted, and that a cheap government would permit the individual energies of the people to develop themselves. Instead of this, a most iniquitous and ignorant clique of demagogues

gained power, increased the taxes, and gave a new impulse to the pernicious centralization. Thus, under the absurd pretence of employing people, the government ordered 10,000,000 fr. worth of silk, in one order, at Lyons. They paid for it \$1 per yard out of the public treasury, and sold it at auction at 25 cents per yard. That silk was bought mostly by New-York houses, and may now be seen and recognized by its rich tri-color, supplanting cotton material in linings for garments. This is one item only out of a vast number of fallacies committed by the most disgusting demagogues that ever burlésqued government. Such operations destroy the profits of regular industry, by interfering with those immutable laws which cannot be disturbed without inflicting injury upon regular business, and that injury has been more or less apparent in the present year.

A singular combination of circumstances seems now likely for a time to reverse that course of events which, for so long a time, has multiplied the raw materials. Among the most prominent of these are the gold discoveries of California, Sandwich Islands and Australia. The tendency of this, particularly in the latter country, is to check if not destroy the wool crops in those regions—the shepherds having very generally deserted their flocks for the gold regions.

The case of the Australian colonies, (for this purpose they may all be considered as one,) are as different as can possibly be imagined; besides the usual occupations of agriculture, they have, as everybody knows, become a field for pastoral enterprise on a scale of unequaled magnitude. The sheep, which constitute their principal wealth, are divided into flocks counting from four hundred to a thousand in number, each of which is intrusted to the care of a single shepherd. Two of these flocks are generally driven together to the same station, where a third person resides, whose duty it is to change the hurdles and watch the sheep by night. The country being infested by wild dogs, it is absolutely necessary that some one should always be present with the sheep, in order to protect them from this cause of destruction, and the force required for this purpose is about three men to every twelve hundred sheep. Now, in the year 1848, the number of sheep in New South Wales and Port Philip exceeded eleven millions six hundred thousand, not to speak of the flocks of South Australia or Van Diemen's Land. It is not, probably, unreasonable to calculate, that in the three years which have elapsed since this return was made, the number of sheep has increased to at least fourteen millions. This enormous amount of property exists from day to day by virtue of the unceasing care and attention bestowed

upon it by the shepherds, under a rigid system of central superintendence; without that care, it could not exist for a single week. Now, let our readers imagine the effect which must be produced on the mind of the proprietors of these fourteen millions of sheep by the information that a gold field has been discovered, which is certain to attract away from their existing engagements every shepherd and hut-keeper in their employment. It will be vain to attempt to retain them by offers of increased wages. One employer of labor may compete with another, but who can bid against the imaginary riches of an El Dorado, in which every adventurer expects to find a splendid fortune impatiently awaiting his acceptance.

Nor is this all. The shearing of the sheep, which takes place about the month of October, is an operation not generally intrusted to the shepherds, but to persons who travel round the country for the purpose. Shearing cannot be long deferred in Australia without ruin to the fleece, from the presence of a seed of a particular grass, well known to the purchasers at our wool sales. If the fleece is not shorn before November, it is very greatly deteriorated in value. Now, those professional sheep-shearers are exactly the persons who, from their itinerant way of life and reckless habits, will be the first to swell the ranks of the gold-finders. Add to this, that the reckless and desperate characters who, having served their sentence of transportation, now swarm in all the Australian colonies, will flock to the gold-field as a common centre, not so much with a view to labor as to profit by those opportunities of plunder which such a scene of confusion and excitement must necessarily afford, and we have enumerated causes quite sufficient to overthrow a social and economical system far more firmly established than that of New South Wales.

In China, the production of silk threatens to undergo change in the next year, in consequence of the apprehended convulsions in British India. That infamous government is, it is well known, supported almost entirely by the fiendish opium trade; and even the mercenary philanthropy of the English is so shocked by it, that there is very little doubt but that the charter of the East India Company, which expires in May, 1853, will fail to be renewed. A company so powerful, having at its control 350,000 troops, will not, however, relinquish its power. It can conquer China, and throw open the opium trade, by which its consumers may from 5,000,000 be increased to 50,000,000, and the speedy depopulation of even that country, which counts its inhabitants by hundreds of millions, may be effected. The appalling crime of *poisoning a whole nation* to become possessed of its country, is actu-

ally in contemplation by the English philanthropists.

In Russia, the threatening aspect of European politics is such as to threaten a disturbance of that inland peace which has so fostered and developed the flax culture. These events, which may diminish the supply of three great staples, are, however, likely to promote a greater supply of cotton. The emancipation of India, and the application of English capital to cotton production and transportation, we are assured by Mr. Bonyne, in the work before us, would produce a supply equal to that of the United States in quantity and quality; and the diminution of the quantities already sent to China would throw back upon the European merchants an increased supply to encounter the enhanced production of Egypt and Turkey, where the sultan has, by the distribution of seed and other modes of encouragement, sought to engage his subjects in the culture, and with more or less success. The French in Algiers are also not without a certain degree of success in that culture, while the high prices of the past year have drawn such quantities from the British and the West Indies, as to afford striking evidence of the ability of those regions to supply under continued high prices.

During the course of the competition from the other raw materials to which we have

alluded, the southern United States have felt the increasing necessity of varying the productions, by producing more food to supply the plantations with necessities, in order to obviate the purchase of them, and something like a retrograde movement has manifested itself in respect of cotton. In the early history of the cotton trade, indigo and many other productions entered into the industry of the planters; but these were speedily all absorbed in the superior profits of cotton, which has, as we have seen, gradually diminished in profit before the increasing competition of other raw materials, and the increasing skilfulness of their application. There has, therefore, manifested itself a desire to raise other articles, in order to divide the labor and expenses of the plantation. Possibly to this fact, added to the deterioration of many cotton lands, may be ascribed the stationary character of the production since 1840. In the last five years the number of bales produced has been 11,306,844, an increase of ten per cent., only, over the previous five years.

It is to be considered in this connection that the products of the slave states have not increased materially per hand in the present century, exclusive of the cotton crop. If we take a table of the export values of the leading southern staples with the total number of slaves, the total production will appear to be nearly as follows:—

	Naval Stores	Rice	Tobacco	Sugar	Cotton	Total \$	No. Slaves	Production per hand
1800.....	400,000..	2,455,000..	6,220,000..	—	5,250,000..	14,385,000..	893,041..	16 10
1810.....	473,000..	2,626,000..	5,048,000..	—	15,108,000..	23,255,000..	1,191,364..	19 50
1820.....	292,000..	1,714,923..	8,118,188..	1,500,000..	26,309,000..	37,934,111..	1,543,688..	24 63
1830.....	321,019..	1,986,824..	8,833,112..	3,000,000..	34,084,883..	45,225,838..	2,009,053..	22 66
1840.....	602,520..	1,942,076..	9,883,957..	5,200,000..	74,640,307..	92,292,260..	2,487,355..	37 11
1850.....	1,142,713..	2,631,557..	9,951,023..	14,796,150..	101,834,616..	130,556,050..	3,179,509..	43 51
1851.....	1,063,842..	2,170,927..	9,219,351..	15,385,185..	137,315,317..	165,034,517..	3,200,000..	51 90

These figures for naval stores, tobacco and rice, are the export values, and not the whole production, of which there is no accurate record. The figures for cotton are the crop valued at the export rate in official returns. Those for sugar and molasses are those of the New-Orleans prices current. As all these products are the results of slave labor, in addition to what supplies food for consumption, they are very nearly the exchangeable values produced per hand, and the increase has been pretty regular, with the exception of the decade 1820-30, during which the oppressive tariffs of 1816-24-28 were in operation. The increase by this scale has been in fifty years \$27 41 each hand, and the com-

forts of the workers have increased in a similar ratio. If, now, we deduct cotton from the aggregates, it appears that the production per hand in 1800 was \$11, and in 1850, \$8, a decline of \$3 per hand. Probably one reason of the decline is the less rigorous treatment of the blacks. Their natural idleness of temper has been more indulged; and they have been more liberally supported; consequently there has been an absence of those devastating insurrections which were so frequent in the West Indies, and which led to abolition.

The average production of the cotton states per hand and per head of the whole population was as follows:—

	Slaves	Product per hand	Whites	Total Population including free blacks	Product per head
1800.....	893,041..	\$16 10.....	1,702,980..	2,621,361..	\$6
1810.....	1,191,364..	19 50.....	2,208,785..	3,480,904..	7
1820.....	1,543,688..	24 63.....	2,842,340..	4,502,224..	8
1830.....	2,009,053..	22 66.....	3,660,558..	5,848,303..	8
1840.....	2,487,355..	37 11.....	4,632,640..	7,384,434..	11
1850.....	3,179,589..	43 15.....	6,432,669..	9,830,889..	13½

Thus cotton has been the main article for employing the blacks, as it has also been of northern industry. The manufacture of cotton at the North has now reached the same extent as had that of England in 1830. Thus the quantity consumed in the United States in 1850 was 609,237 bales per census, which, at 400 pounds per bale, gives 243,694,800 pounds. McCulloch gives the extent of the English cotton trade in 1830; and if we assume his figures as the rate for the manufacture of the same quantity in the United States, the result is as follows:

M'CULLOCH'S COTTON TRADE.

1830.

240,000,000 lbs. cotton, 7d.....	£7,000,000
Wages, 800 weavers, spinners, bleachers, £22 10s. per year.....	18,000,000
100,000 engines, machinists, smiths, &c., at £30 each.....	3,000,000
Wages, superintendence, machine materials, coals, &c., and profits, &c.....	6,000,000
Total.....	£34,000,000
Value goods exported.....	19,428,664
Value consumed at home.....	£14,571,336

UNITED STATES COTTON TRADE.

1850.

243,694,800 lbs., 11½ c.....	\$26,775,000
<i>Wages per Census.</i>	
33,151 males.....	\$7,846,536
59,136 females.....	8,440,968
	16,287,504
80,000 engineers, &c., at \$400.....	32,000,000
Wages, metals, profits, &c.....	35,000,000
	110,062,504
	4,734,424
	\$105,328,080

By this calculation, the value of cotton goods made in the United States is \$110,062,504, from the same quantity of cotton which yielded a value of \$173,000,000 in England in 1830. This calculation gives the raw cotton at the actual export average of the year, which was not quite so high as the price in England in 1831, but does not embrace the cost of transportation to the factories. McCulloch gives the average wages of spinners, weavers and bleachers, at about \$2 00 each per week. The American wages are \$3 00 for girls, including board, and \$4 00 male and female. The average wages of other parties employed are higher in the United States than in England. The census value of the cotton goods made in the Union is \$61,869,184, or forty-four millions less than that arrived at as above. The census can, however, in no degree, be depended upon, at least as far as the tables which have yet appeared afford evidence by analysis. This result follows, however, that England sold more than half her whole manufacture, while the United States consumed the whole of the same quantity made, and they found a market

among those who produced the raw material and the producers of the raw material paid for the wrought goods prices enhanced by the tariff 30 per cent. above what the same goods could have been purchased for elsewhere—that is to say, on \$105,328,000 worth of goods, \$40,000,000 tribute was paid to the manufacturers by the consumers of goods. By these means it is that the aggregate production of the southern states averages, on data furnished by the census of 1840, \$58 per head of all the population, while those of the New-England states average \$84 per head. The manufacturers, almost with one accord, assert that they cannot continue operations without a tariff which shall enable them to obtain such prices from the consumers of goods as will enable them to pay high wages to operatives—that is to say, slave labor must pay the high wages of white labor at the North. Suppose now, that slave labor did not exist, that neither raw material was furnished to manufacturers from the South, nor a market afforded to them for their wrought fabrics, would the wages of the North average as high as they have hitherto done? If the process was reversed, and the North had to pay the South 30 per cent. advance on their products, the average of the southern products would by so much be enhanced, and that of the North be diminished in the same ratio—that is to say, from an average of \$84 per head at the North, production would sink to an average of \$60, and the average southern production from \$58 would rise to 71 per head; instead of being \$24 less, it would be \$11 per head more than the average of northern productions.

The object of the work of Mr. Bonyng, which we have now under notice, is to bring about some such result as this, viz., by diversifying the industry of the South with a greater variety of products, at least as profitable in their culture as cotton, to equalize the profits of the two regions, and cause the industry of the South to enrich that region as well as the North. The objects of cultivation which he proposes to introduce are tea, coffee, indigo, mango, bamboo, india rubber, cane, lime, nutmeg, citron, &c. The leading articles are the three first. The quantities of these articles consumed in the United States, England and France, are—

	Value
Coffee.....232,000,000 lbs.....	\$58,000,000
Tea.....70,000,000 “.....	20,000,000
Indigo.....20,000,000 “.....	20,000,000
Total.....322,000,000 “.....	\$98,000,000

Mr. Bonyng has been a successful indigo planter, and a successful tea planter, in the East; and he affirms and shows that these vast crops can be produced in the United States as profitably as any other product, and in as great quantities. Indigo, it is known, was one of the first staple exports of the

southern colonies, and still grows wild, waiting to receive a little of that improved and scientific attention which has been withheld from it during seventy years. In some localities of the South it still continues to be raised, and the export returns of the present year show an export value of \$3,000 domestic indigo. At the commencement of the present century, before cotton had absorbed all the energies of the South, there was exported 134,000 pounds of indigo, at 62 cents per pound. Since that time the demand for indigo has increased in the proportion of the supply of raw materials requiring to be colored; and the East Indies now export 13,000,000 pounds of indigo, which sells on the spot in Calcutta for \$1 to \$2 per pound, and the finest descriptions at \$2 45. Thus, the relative value of cotton and indigo has changed places: the former, in half a century, has fallen from \$1 to 3 cents per pound, and the latter has risen from 62 cents to \$2. The culture of indigo has been abandoned to India, where, in spite of the high prices, the infamy of the government, the robberies by the officers, the inroads of the Tartars, the idleness of the people, the uncertainty of the seasons, conspire to destroy profits. All these circumstances reduce the chances to one good year out of three. Mr. Bonyuge shows pretty conclusively, that the plant may be raised advantageously in the southern states, without any of these drawbacks upon success. He describes the process of culture and manufacture thus:

"The land is plowed or hoed, say some nine inches deep, and the soil is pulverized, i. e., clods well broken, roots of grass and weeds carefully taken away; then the seed, mixed like flax-seed with clay, is cast in the ground, and a very light harrow; a bush with moderate weight on it is used often in India. If weeds spring up with the plant, it would be necessary to take them out; the plant, after a few showers, covers over the land, and keeps down all weeds. It grows even to some six feet high, varying from four feet to five feet. When it gets, or before it gets, to its full height, and before the leaves get yellow in the least, the plant should be cut, and carried to the factory the same day. All plants should be cut very early in the morning, and then placed in the vats, or otherwise not to be heaped up to get heated. Each vat may be made to hold from 5,600 to 8,000 lbs. of plants. The plant is all placed horizontally in the vat, and when filled up, hurdles are laid up on the top of the plant, and beams are laid across the hurdles; the ends of the beams being secured at the side walls of the vat. The water is then poured in, and the plant is steeped for ten hours or upwards, depending on the heat very much. The water is then drawn off from a vent, at the bottom of the vat, into another vat built at the base of the one in which the plant had been steeped. The beams are then raised off the hurdles, and the hurdles taken away; and the steeped plant is taken out of the vat, and made use of for firewood. A large quantity of potash might be obtained from it.

"The water being drawn off from the upper vat, the steeped plant is then beaten up by six men entering into it, and beating with their hands until the coloring matter which is contained in it begins to show itself in small atoms. The men then get out, and the indigo or fecula subsides, and soon after the water is drawn off. There are two vents in the

lower vat; the upper vent is for drawing off the water, the lower one for drawing off the indigo, and a quantity of the water which could not be well drained off, without disturbing the fecula. The fecula is then put into a small vat, either of wood or masonry, and allowed to rest some time, and then more of the water is drained off. It is then taken to be boiled in a boiler generally from six to ten feet square, and four or five deep, and all froth carefully skimmed off. It takes five or six hours to boil it. The boiler is made of copper or iron, as the party may fancy.

"When boiled, it is let out from a vent in the bottom of the boiler into a vat, where the fecula soon subsides, and more of the water is then drawn off. It is then filled into square cases, pierced with small gimlet holes at about two inches apart; in the wooden square is placed a cloth fitting to the square; and then the boiled indigo, still retaining a good deal of water, and consequently of a thin consistency, is filled into the square; a lid is then placed on the top of the square, which fits into it, and all is placed under the press; and as the lid is pressed down into the square, it forces the water through the cloth, and through the holes in the side of the frame; then when all the moisture that can be pressed out is done so, the sides of the square or box are taken off, and the indigo left on what had been the bottom. The whole is then divided by a board, or measure, into eight parts, and cut through by a piece of wire, giving sixty-four squares; then each square or cake is placed on a hurdle in the shade to dry. The doors of the drying house are locked up, and the indigo in that state takes a month to dry; when it is packed in a strong, coarse case, and sent to market.

"In precipitating the indigo, it is not good to use anything. Lime is destructive, and gum makes it hard, and liable to crack, which is not liked."

He, then, following his own experience, gives the cost of culture and manufacture in India, with the probable expense in America:

"I will give the above items in tabular order, with an estimate of the probable expenses in America:		
Cost of 200 to 250 monds, or 16,000 to 20,000 lbs.		
plant, say.....		\$36 00 to 40 00
Three men to fill and empty 3 vats.....	15 cents.	
Raising water for 3 vats.....	25 "	
Half of one man's salary to boil.....	6 "	
Nine men to beat 3 vats.....	45 "	
Two men to press the indigo.....	10 "	
Expenses of conveying 200 monds, say.....	\$2 00 "	
Fireman.....	5 "	
Wood.....	30 "	
Packing and chest, sixty cent. 3½ monds.....	20 "	
		\$3 56.....\$3 56 to 3 56

Total expenses per 75 lbs.....\$39 56 to 43 56
To which are to be added expenses of law-suits, loss of advances—making it at the very lowest, 53 dollars.

PROBABLE EXPENSE IN AMERICA.

"It is necessary to ascertain in some way the produce per acre. Thirty monds would be a good produce per biggah; the biggah measures 20 khudams (steps) of five feet each; the step in India, or khudam, is the space between where the right foot is raised from the ground, to where it rests on the ground again—twenty khudams, equal, therefore, 100 feet; that squared is 10,000 feet—43,560 square feet in an acre—therefore 4½ or more biggahs in an acre, and consequently there would be 130 monds,

or 10,400 lbs. of green plant on an acre. The biggah was generally calculated five to an acre.

"But as the above is my own experience in measuring and weighing, I will here follow it. Now the ground where I had been cultivating that indigo was excessively sandy—so that at the lowest calculation 130 monds, or 10,400 lbs. of plant, may be put down for an acre in America.

"For indigo I would give five men to prepare an acre and sow it, not that the labor is greater than in cotton; weeding, one man; cutting the plant, six men per acre; the conveying it to the factory would cost little, as the factory could have the lands around it under indigo, which could not be the case in East India. Therefore,

For preparing and sowing land, 6 men per acre, at 20 cents.....	\$1 20
For weeding, 2 men per acre, at 20 cents.....	40
Cutting plant, 6 men per acre, at 20 cents.....	1 20
Conveying to factory, a man and horse, say..	60
Two men to fill and empty one vat.....	40
Two men to beat two vats.....	40
One man to boil six vats, $\frac{1}{2}$ part of his wages for two vats.....	8
Firewood, and man, two vats.....	28
Packing and chest, $3\frac{1}{2}$ monds, say 60 cents— $\frac{1}{2}$	20
Raising water, two men for six vats—for one vat.....	7
	<hr/> \$4 83

As 220 monds of plant make 75 lbs. of indigo, therefore as 130 : \$4 83 :: 220 : or \$8 17 per mond.

"This is not much more than one-sixth the price it would cost in India. In America, all the beating of vats and raising of water could be done by machinery. The sowing of indigo would be from 1st of April, and the manufacturing would end the middle of September. The indigo plant requires to be only weeded once, and there can be no hoeing after the seed be sown. If it is shown that the manufacturing with labor at twenty cents in America, is cheaper than in India, where labor is put down at five cents, it arises from the purchase of the plant. The indigo fails so often in India from causes shown, that if the ryot did not get a fair profit when successful in saving his crop, to pay for former losses, he could not go on.

"Paying for labor 50 cents per day, the expense of 75 lbs. would be,

Preparing and sowing land, 6 men per acre.....	\$3 00
weeding 2 ".....	1 00
Cutting plant.....	6..... 3 00
Conveying to factory.....	1 00
Vats, filling and emptying, 2.....	1 00
Beating vats.....	2..... 1 00
Boiling.....	10
Firewood, &c.....	25
Packing and chest, $3\frac{1}{2}$ monds, 75 cents, 1-5..	15
Raising water.....	20

\$10 70

"Say 220 monds at 75 lbs. of indigo. Therefore as 130 : \$10 70 :: 220 : \$18 10 for 75 lbs.

"The lowest description of indigo sells in Calcutta for not less than 30 dollars for the 75 lbs. The average price for good, for the last years, would be about 65 dollars for 75 lbs.; but the best Bengal indigo is rarely under 80 dollars, and from that up to 100 dollars. Some time ago it had been up as high as 340 Rs. or 170 dollars; that is, the sale price obtained by the planter at Calcutta, for 75 lbs."

The causes of loss and failure which belong to India, and which do not pertain to America, taken into consideration, the raising and manufacture of indigo would appear to be far more profitable than cotton or even sugar, which has made such progress in the last ten

years. The value of this article to commerce is very considerable in the United States. It pays a duty of 20 per cent., and the value imported is about \$1,000,000 for 1,500,000, or about 70 cents per lb. average. Into England, the import averages 9,318,300 pounds, worth \$6,000,000, and into France about as much more. If in the United States such results as those which the experience of Mr. Bonyngne points out, can be realized, the consumption could be immensely promoted, and the crops of the South become second in importance.

But, perhaps, to the American, the most interesting chapters of Mr. Bonyngne's book are those which treat of the tea trade. The world has been so accustomed to regard China as the sole source of supply for that pure, most healthy, and delicious beverage, that it is not without some degree of incredulity that the subject of transferring its culture to our shores is apparent. Nevertheless, Mr. Bonyngne's experience in the culture, general intelligence and knowledge of our southern country, eminently entitles his exposition to the most profound attention. That gentleman had four tea plantations in the Assam country, and was quite successful as far as making choice tea went. The cause of his retiring is thus briefly given by himself:

"The Hon. East India Government induced me by letter, promising me a grant of Koojoo, Buramanjan and Gin-lang, and protection for myself and people, to enter the Tartar country—of a part of which they had taken possession. On the strength of these promises, I proceeded to the country, with the view of civilizing the people, and also to better myself. I worked hard in that out-of-the-way country (which, although larger than some of the United States, has not yet found a place on the maps of the world) for five years. During that time, the Tartars took up arms to drive the British from the country, but proved unsuccessful. However, government, for cause or causes not assigned, and without any notice to me, withdrew the guard from Koojoo, and also the surrounding guards, and so resigned the country, to all appearance; and the Tartars, who viewed me as the then sole representative of the Company, holding their land on the Company's authority, assembled at night and destroyed my property, and killed several of my servants."

Then follow long extracts from Indian publications, giving a full account of the events which ruined his hopes there, and determined him to try his fortune in our own country, not only more peaceful, but possessing greater advantages than even China for that culture. We have not space to copy his very interesting chapters upon this head, but commend to our readers the work itself, which contains also some valuable hints upon other objects of culture. We will append, however, the estimated cost of a tea-farm in the four years, according to the experience of Mr. Bonyngne, in Assam.

"In the fourth year, on the 100 acres, I have shown that 30,000 lbs. of tea cost to manufacture,

&c., \$1,062 50, being but 3½ cents per lb., and that, by use of machinery, the quantity might be manufactured for 2½ cents per lb., calculating the expense of slave labor at 20 cents per diem.

"But calculating it at 50 cents per day, for free labor, it would be as follows:

Hoeing 100 acres, 2 men per acre	\$100 00
Sieves (additional) 50 at 50 cents each	25 00
Plucking leaves, say 1,200 lbs. per acre, of green leaf, one man 60 lbs. at 50 cents, or 120,000 lbs.	1,000 00
Manufacturing, one man to 60 lbs. green leaf, or 120,000 lbs.	1,000 00
Charcoal and firewood, 10 cents per 100 lbs. dried leaf, or 30,000 lbs.	30 00
Packages for 80 lbs. 50 cents or on 30,000 lbs.	187 50

Total expense.....\$2,342 05

30,000 lbs. for \$2,343, or 7 4-5 cents per lb.

"This would be a means of not only enriching the cultivator, but of keeping up the price of labor to some \$180 a year, and would leave the cotton trade and rice trade to fewer hands. It would give employment to the many, encourage immigration, and give to all a greater degree of prosperity.

"The trade of a tea-maker might be made an item the first season, but after the first crop every man in the business would be *au fait*. Therefore I do not put down any item for a tea-maker. The rolling of the leaves might be done by machinery, and would, at the first estimate, in which I allow the expense of a slave at 20 cents a day, be a saving of 1½ cents. per lb.; or, in the second estimate, wherein I allow the hire of labor to be 50 cents per day, a saving of 3½ cents per lb. Leaving the cost of labor 50 cents, still, with machinery, simple in its structure, and therefore of very trifling cost, tea would cost the planter only 4 7-15 cents per lb."

The general view of the trade between the countries of Europe and America with China and the East Indies, is one of great interest. The oppressive Indian government is supported almost altogether by the sale of its opium to China and England, and the United States chiefly supply China with the means of buying that opium, by purchasing its silks and teas. Now, the certain mode of destroying English rule in India, and consequently of upsetting their schemes for supplanting United States cotton, is to support China in the production of tea. The national disadvantages which China labors under from the absence of roads, the topography of the country, the destitution of wood for tea chests, and the want of means of transportation, more than counterbalance the cheapness of labor, while the land of the South will produce better and larger crops of tea with less liability of injury from drought. The tea plant is more hardy than cotton, inasmuch as hard freezing will not affect it. The time will undoubtedly come when the culture and manufacture will occupy the fields of Virginia and other southern states, to the great profit of the owners.

The annual contribution of the United States to the support of the British East India Company is about \$5,000,000 per annum, being the value of the tea purchased in China. This will appear more directly from the following balance-sheet of a year's trade with China, drawn from the treasury reports.

IMPORT AND EXPORT FROM AND TO CHINA, 1850.

EXPORT.

Domestic Produce.

Ginseng, lbs	367,448	\$122,916
Beef, lbs	1,266	12,872
Butter and cheese, lbs.	40,531	8,178
Pork, &c.	—	17,578
Flour, bbls.	3,156	19,280
Corn, bushels	4,172	2,511
Spirits, gallons.	9,951	4,429
Soap, lbs.	77,032	4,430
Bread, lbs.	54,700	2,250
Cotton goods	—	1,203,997
All others	—	87,020

Total domestic.....1,485,961

Foreign Goods.

Silver	—	\$25,000
Lead, lbs.	1,294,240	53,617
All others	—	40,639

Total foreign goods.....119,256

Total exports.....\$1,565,217

IMPORT.

Tea, lbs.	28,743,376	\$4,585,720
Sugar, lbs.	944,060	27,023
Cotton goods	—	3,299
Silk goods	—	1,443,446
Matting	—	61,423
Tin	—	105,843
Indigo, lbs.	43,465	14,461
Hemp, cwt.	435	5,951
Manilla, cwt.	6,290	34,587
All other imports	—	291,717

Total imports.....\$6,593,462

Balance of imports paid by bills on } \$5,028,245
London.....}

Thus, five millions dollars per annum is paid by bills on London, drawn against United States cotton, mostly sold in that market, and diminishes by that extent the amount of specie drawn from London, or during the past year has increased the amount sent there. The London bills given by the United States dealer for tea, are by the China merchants paid over to the East India Company for opium and by them remitted to London where they are paid by cotton or gold sent from the United States. The tea so imported is in amount at an average of 16 cents per lb., and costs 20 cents, freight, &c., included; while Mr. Bonyngue shows that it can be raised on our soil for four cents. The cotton in the Atlantic states costs six cents, and laid down in Liverpool seven cents, and sold at that to reimburse tea bills coming from India at twenty cents per lb. Then, three lbs. of cotton, which cost eighteen cents on plantation, are given for one lb. of tea, which could have been raised for four cents. Now, if that tea were raised at home, so as to supply the 30,000,000 lbs. per annum, which the United States requires, there would not only be a direct saving of \$3,600,000 upon this article, but the diversion of employment would add as much to the value of cotton. Not only so, but the 80,000,000 lbs. of tea which England now requires, would be drawn from the United States; and she

would be forced, instead of being independent in respect of cotton, to be still more dependent for another tropical product.

The necessity on the part of the South for introducing some new staples, is involved in the course of the progress of the great West. The valley of the Mississippi will become, eventually, the great seat of manufacture for the world; and the states west of the Alleghanies must produce articles so similar to those of the Atlantic states, that the actual interchange of commodities must yearly become less. The tea, coffee, and sugar, which are now imported in northern vessels, and which find their way west in exchange for farm produce and raw materials, may all be raised at the South as successfully as the last-named, sugar; and while the course of western industry will gradually separate the East and West, both will be found in stronger ties and more absolute dependence to the South. If to the cotton, rice, and tobacco, which England and Western Europe now draw from the South, the great items of tea and indigo are added—and there seems to be no serious obstacle in the way, while profit lures to the enterprise—then, indeed, will the era of southern prosperity have dawned, and oscillations upon any branch of culture may always be made to relieve any over-production of the others. The cultivation of sugar is a remarkable evidence of what may be done. Pennsylvania boasts that in twenty-five years her coal production from nothing rose to \$15,000,000 per annum; but the sugar production of Louisiana has exceeded it in less time.

While commending the work of Mr. Bonynge to our readers, we would remark, that that gentleman has undertaken to supply the genuine tea plants and the other plants which he seeks to introduce, to order; and quite a number of South Carolina gentlemen have entered into it with spirit.—*Kettell*.

SOUTH'S POSITION IN THE UNION.

—EMANCIPATION — ABOLITION — NATURAL LAW OF SLAVERY—PHYSICAL CHARACTERISTICS OF THE NEGRO—FATAL RESULTS OF SUBSTITUTING WHITE LABOR FOR BLACK AT THE SOUTH, ETC.

NEW-ORLEANS, July, 1851.

DEAR SIR—There is shut up in the archives of the science of medicine enough of hidden knowledge to save the Union now and forever, if it were brought to light.

Knowledge is not power, unless it is made active by being set free. Imprisoned in the dissecting-room, or in the student's closet, it is like light under a bushel. To be made an element of political power, the aid of the politician, the greater the better, is needed to give it an impulse that will send it to the cottage of every voter. The object of this

communication, and of the first article in the Medical Journal, I herewith send you, is respectfully to call your attention to the result of some scientific investigations that I faintly hope may be converted into an instrument of good to assist in saving the Union, if brought upon the political arena at this important crisis.

Some time ago I was appointed by the Medical Association of Louisiana to make a report on the diseases and peculiarities of the negro race. In performing that duty, the third of a century's experience in treating diseases in a section of country where the white and black population are nearly equal, lent me its aid. A vast number of facts, standing thickly and closely along the obscure by-paths, that none but southern physicians travel, have been interrogated, and the important truth demonstrated, "that the same medical treatment, under the same external circumstances, which benefits or cures a white man, often injures or kills a negro, and *vice versa*." It may not be unworthy a great statesman to inquire, if what is true in medicine may not be true in government, and to investigate the question, whether the laws and free institutions, so beneficial to the white man, may not be detrimental and deteriorating to the negro. That a great difference exists between the organization of the white and black man, has long ago been proved by anatomists.

Sømmerring, for instance, a learned author of the last century.—Difference in physiology also implies difference in structure. The practice of the negroes in exposing their bare heads and backs, through choice, to the rays of a sun hot enough to blister the skin of a white man, proves that they are under different physiological laws from him—not from habit—(as such habits cannot be acquired;)—but from difference in structure. Comparative anatomy, physiology, and the phenomena drawn from daily observation, prove the fallacy of an hypothesis, that foreign writers, chiefly English, have been very industrious in propagating in this country, for the last twenty years, "That there are no internal or physical differences in mankind, whether white or black." The reception of this hypothesis, as if it were an established truth, by a considerable number of our people, lies at the bottom of all those political troubles that endanger the Union; as it takes for granted that the personal freedom, so ennobling and beneficial to the white man, would be equally so for the negro. When this hypothesis was first announced by Gregoire, in the national assembly of France, Robespierre, to stifle all objections, cried out, "*Perish the colonies, but save the principle*." The prosperous colony of Haiti, with a population equaling a third of the United States of that day, was torn from

France, not so much by the negroes in rebellion, as by the French army, under Southonax, having been instructed by the home government to carry out Robespierre's principles. Under that abolition principle, Haiti became a free negro republic, and instead of going up, *pari passu*, with us, immediately began to *perish*, and continued to perish, until it voluntarily threw itself into the arms of despotism. The British East India Company got the indigo culture transferred from Haiti, then making three-fourths of all the indigo in the world, to the East Indies, and have ever since monopolized it. The negroes got liberty, and after shamefully abusing it for more than half a century, voluntarily gave it up as a thing of no value to them.

Nowhere were the doctrines of the French revolution more strongly denounced than in Great Britain; yet, after the practical workings of those doctrines were found to enrich the British East India possessions with a monopoly of the indigo culture, the same doctrines were sent across the Atlantic in almost every English book, newspaper and periodical, urging us to give the negro liberty; the same thing as to urge us to give up our cotton and sugar culture, and let British Asia monopolize it as well as that of indigo.

None know better than our friends, the British, that free negroes will not work, (having tried the experiment,) and that white people cannot endure the hot sun of a cane or cotton field. To give an hundred millions per annum for a second-hand abstraction of Jacobin coinage, would be paying too dearly for a whistle to amuse the North, and a sword to pierce the South. The hypothesis that would place the negro on a political and social equality with our free white citizens, is urged upon us by a foreign people, who have neither social nor political equality among themselves, and whose laws and usages make distinctions where Nature makes none. Yet without annulling the artificial distinctions, dividing her own subjects into classes, Great Britain has permitted her pulpit to be desecrated, and her literature corrupted, to break down the distinctions that Nature has made between the white and the black races inhabiting the United States; her subjects preaching a false French hypothesis to us, as a sound Christian and republican doctrine, and taunting us daily as being only half-way Christians and republicans, because we do not receive it. Having profited by the dissensions springing from the seed of their own sowing in the East Indies and elsewhere, the East India Company, the lords of the loom and those in their interest, have almost out-Yankeed the Yankees, (as they call all Americans,) being in a fair way to carry back American manufactures to England, and the cotton and sugar culture to its old

home in India, by humbugging us with abolition literature, abolition divines and agents, like George Thompson, to give up our glorious Union for a vain abstraction of Jacobin origin. Great Britain would, no doubt, form most favorable and highly friendly commercial alliances with any seceding state or states, just as long and no longer than it would take a bitter and bloody civil war between the North and the South to break up American manufactures, and to transfer the agricultural wealth of the South to British Asia, where she has already hundreds of thousands of Chinese (according to Leonard Wray, Esq., the author of the "*East India Sugar Planter*," a late work published in London) engaged in the cultivation of sugar and cotton, the experiments with Hindoo laborers not having been satisfactory. But the hypothesis which is undermining our Union, "that *the negro is a white man only painted black*," has no foundation in Truth or Nature. All history disproves it. The science of comparative anatomy bears positive testimony against it; the dark color not being confined to the skin, but pervading, to a certain extent, every membrane and muscle, tinging all the humors, and even the brain itself, with a shade of darkness.

The statue of the negro in Westminster Abbey, kneeling before that of Mr. Fox, is at once recognized as a veritable son of Africa, although made of the same white marble—thus disproving, by the artist's chisel, the mischievous sophism which makes color the only difference.

Observation also proves that the negro is under different physiological laws from the white man. The Bible declares the same thing, as it gave him the significant name *Canaan*, or "*Submissive knee bender*," to express his nature, and doomed him to slavery, as a condition the most consonant to that nature. That book gave him but one commandment, to serve his brethren, to be their servant of servants—clearly implying that they are responsible for his observance of the other ten. Domestic slavery is made a blessing instead of a curse to the Ethiopian or Canaanite race, by a different conformation of body, cast of mind, and turn of thought, imparting to that race a fitness for that institution, and an unfitness for any other. Hence justice, mercy, and the best interests of the slave race suffered no violation. (as Voltaire vainly thought, and rejected the Bible as a fable on that ground,) but was promoted by Joshua taking their country from them, and reducing them to bondage; inasmuch as their organization, not less than that of children, rendered them unfit for independence. If both the North and the South were to study the African character more closely—the natural history of the Ethiopian or Canaanite, and what the Bible

reveals concerning him—our happy and prosperous confederacy would be in no danger of dissolution. The former would see that personal freedom is in opposition to the negro's nature—and the latter would perceive, that, by the action of a higher law than the Constitution, or anything that fanaticism can do in the Union, or out, there is no more danger of his leaving servitude, provided it be the proper kind of servitude, to go in quest of liberty, than the ox his straw in search of animal food.

The consciences of many of our Northern people are very tender, because American liberty, equality, and republicanism do not come up to the abstract notions of British and some other writers of what such things ought to be. Our admirable system of government is founded on the Baconian philosophy carried into politics, and not on impracticable abstractions. It would not reach the ideal, impracticable standard of liberty, equality, and republicanism, if the negroes were turned loose, until the women and children were allowed to vote, and all political and domestic restrictions removed from them. Natural distinctions in society is the rock on which American republicanism is built—built on any other foundation, it never has stood, and never can stand. By virtue of those distinctions that Nature alone has made, women, children and negroes are assigned to such places only as best suit their physical capacities; nor could a female or a baby become the head of our government, as females and babies sometimes do in those tottering governments founded on artificial instead of natural distinctions in society. Nor is our slavery, slavery in the European sense of the term. It is not like bondage in Algiers, nor like want created to diminish wages, stalking about in Great Britain and Ireland, begging service from door to door, without food or shelter; but it is only a relation in conformity to the natural adaptations of the persons consigned to that condition. Nor are women and children in slavery among us, as crazy theorists have asserted, but only in a relation or state, in conformity to their nature, as the negroes are. To break up this fitness of things would be to break up the government. The restraints of the domestic or fireside government having been removed by the predominance of impracticable notions of liberty in France, mobs of women and boys overawed the National Assembly at Versailles, in the days of the French revolution. At a later period, Bolivar, foolishly trying to improve on the model government left by Washington, turned loose the negroes of the republic of Colombia. Where is the republic of Colombia? It is not on the map of the world. It was there, and you remember when. It has gone. To know how and why, let Nature

be called on to answer. She will say, that it was when political fanaticism violated her by disregarding the distinctions which she had made, that the French republic fell, and Colombia was blotted out from her place among the nations.

It would be bad enough to break up our confederacy for the benefit of a few negroes, or even of all Africa, at the expense of the white race; but it would be madness to do so to impose on them a thing that has always been ratsbane to their minds and morals.

It is unnecessary for me to apprise you, that the great mass of the people North and South, of both political parties, view with pride and admiration your patriotic efforts in the cause of *Union*, and that you are acknowledged here and elsewhere, as everywhere within its boundaries, as the chief defender of the *Union*, the laws, and the Constitution. Your arguments are amply sufficient to preserve the Union against the action of those who are satisfied with it as it is, and are only anxious that the obligations imposed by it be respected by the people of all the states. But they have no tendency to restrain that portion of the people at the North, who believe the Union does too much for the slaveholding interest in remanding fugitives from service back into bondage; nor those of the South, who believe it does too little, or worse than nothing, and is about to be perverted into an engine to crush them.

Both these parties are growing parties, and will, if not checked, soon out-number the constitutional or Union party. The belief is industriously propagated at the North, by George Thompson & Co., that the Constitution tolerates injustice in authorizing the enactment of laws to restore fugitives to the bondage from which they fled—and that all such enactments are violence offered to the conscience of a moral and religious people, being contrary to the *higher law of God*. Great numbers are inclined to favor such opinions, who are not with Mr. Thompson and his abolitionists, but are willing to carry out the laws in good faith, until they have an opportunity to alter or change them. Even your eloquence cannot long make the Northern people love an Union requiring them to do violence to their conscience in obeying the requirements of the laws done under it, if by so doing they believe they are violating a higher law of God. Nor could you restrain such, even among your neighbors, from agitating the repeal of the Fugitive Slave Law, although you were to lift the curtain of time, and make them behold with their eyes the grass growing in the streets of Boston, their trade and manufactures destroyed, the South locked against them, their pockets drained to support a war against their former best friends and customers, and their

best blood flowing in the unnatural strife. You know that the sons of the Pilgrims are made of that stuff to lose all these to save their conscience—conscience is the same whether pinned to a false Jacobinical French hypothesis, asserting the negro's right to liberty and equality, or to the eternal word of truth, derived from Nature, and revealed in the Bible, denying that right. Fanaticism, true religion and patriotism are alike in some respects, being insensible to the dollar argument, and alike unappalled by the fire or the sword obstructing the cause that either has espoused. Although your eloquence has as much power in the South, yea more than any other man, it cannot long keep up the love of union among our people, if that political compact be perverted from its original intention of securing peace and equality into an instrument of aggression, in the hands of an unbridled majority, to rob us of our equality, and to kick us into a corner to dwell as submissionists, until the iron heel of power treads us into the dust. Here, if not five, as Mr. Clay would say, are two bleeding wounds requiring to be stanchd to save the Union, if not from immediate, from ultimate dissolution, and who are to stanch them? The sovereign people? They have long been trying, but they work awkwardly, not having the requisite knowledge of the anatomy of the body politic, and not understanding its internal organization sufficiently to know, that, from the laws of necessity, some parts of the complex machinery must be made to honor and others to dishonor; some to gather, and others to consume the products gathered—that, like the human system, it is composed of elementary organs, as different in their nature and structure, as the brain from the stomach, or the muscles from the bones, and that the stimulus that moves one will not another—being endowed with different kinds of sensibility. By going deeply into the organization of our political institutions, it will be found that domestic slavery is not a blot or excrescence upon them, but a component part of their structure, and cannot be excised or cast off without destroying the organism uniting all the parts of this confederacy into a grand, wonderful, and progressive whole, such as the world never saw before. The reason is, that the African is *not* constituted in mind or body, in the skin or under the skin, like the white man, but is a being peculiar to himself, and unlike any other kind of man. So different was he from the rest of the population, that when our fathers brought him into the Union, they retained him in the same position he occupied anterior to his admission into it. Nor did the Revolution, the state Constitutions, or that of the Federal Union, make any change in the government of women and children—no political power being accorded

to them—nor did they want it—nor would they have accepted of it had it been offered to them, because its exercise would have been unsuitable to the sex of the one and the tender age of the other. As they were in colonial times, so are they now, and so are the negroes—each of these parties being left to move in those paths wherein it has always found its greatest happiness.

It is erroneous to suppose that the cotton and sugar interest, grown up since the adoption of our present Constitution, has perpetuated domestic slavery in the South, which otherwise, ere this, would have been voluntarily relinquished. The extension of the cotton and sugar culture, so far from being misfortunes to the slaves, has tended, more than anything else, to ameliorate their condition; because the product of their labor is thereby sufficiently valuable to enable their masters to supply them with all the necessary comforts of life, being prompted thereto, if not by humanity, by the motives of interest. The most efficient, and, of course, the most profitable laborers, are those who are the most active, healthy, happy, and contented. To be active, healthy, happy and contented, there is a higher law, which says, their griefs shall be inquired into, their troubles removed, and they shall be well fed, lodged and clothed. Interested motives, if nothing else, would force the master, whose slaves are profitable to him, to protect them from what are called the abuses of slavery, and to bestow on them every comfort and attention that the most tender humanity would give. Everything which enhances the value of the slave improves his condition; as it brings the self-interest of the master the more strongly to bear in protecting him against abuses, and in adding to his comforts. On the other hand, everything that diminishes his value, or that of his labor, whether it be the introduction of Chinese laborers into India, or the exclusion of slave labor from any state or territory where it would be profitable, operates injuriously against the interests of the slave, who may with truth say, "Save me from my friends, and the laws of God will make it my master's interest to take care of me." Slavery, before and at the time of the formation of our present Union, was not as good a condition for the blacks of the South as it is now, because the profits of that kind of labor were not sufficient to afford the laborers the comforts of life they now enjoy.

Their value was also so inconsiderable that self-interest was not so watchful as now, to protect them against gross personal abuses. But if their labor were ever so unprofitable, they would not be emancipated in the South, as they have been in the North, for the plain reason, that, if turned loose, they would be a tax and a nuisance too heavy

for the white population to bear, and a war of extermination would be the consequence.

The few that were emancipated in the northern states have been a nuisance, a tax, and a burthen to the white inhabitants, half filling the northern prisons, penitentiaries, and almshouses. The white population of the southern states have no other alternative but to keep them in slavery, or to drive them out, wage a war of extermination against them, or go out themselves, and leave their fair land to be converted into a free negro pandemonium. *But why not keep them in slavery?*

The white and the red ants make slaves of the black ants, yet they are the very insects to which the Holy Scriptures refer us to learn wisdom. For every negro in slavery in the South, there are more than an hundred thousand negro ants in slavery in the same region.

Slavery, therefore, of the black to the white man is not incompatible with the economy of Nature. The institution cannot be founded in sin, or we would not have been referred to the insect slaveholding sinners to learn wisdom. The products of slave labor form a very essential part of the wealth and prosperity, not only of our entire republican confederacy, but of the world at large; a single product of that labor furnishes a cheap clothing for the inhabitants of the globe, who, having less to pay for clothing, have more to expend in purchasing knowledge, and more time to spare in cultivating the moral virtues. If it be a sin, it is unlike any other sin, in doing good to the whole world instead of evil.* To dispense with the products of slave-labor would not be much unlike dispensing with the offices of the liver in the human system, because it is a dark, ugly organ, gathering and distributing black, sluggish blood, without a drop in the *portal circulation*, (as it is technically called,) reaching the free vital air, as every drop of blood in every other part of the system is continually doing in the lungs. Yet unlike every other organ in the human body, the liver thrives, by digesting that which every other part rejects, and sends from it to be vivified by the free air in the lungs before it will drink it in. It is worthy to be remembered that our fathers were practical men, and founded our government on the truths taught by experience, and rejected the sophisms of the *a priori* logic of the illuminati. Unfortunately those sophisms have outlived the many republics they have killed.

One of these sophisms which teaches that "the negro is only a lamp-blackened white man debased by slavery," has led many of our northern people to believe that slavery is sin, and has made some of them

but too willing to kill the world's last hope of republican institutions, to get rid of a sin that has no existence as a sin, from anything said against it in the Old or New Testament; but is only inferred to be a sin by a Jacobinical sophism picked up amongst the ruins it so largely helped to make of republican institutions in France, and from thence exported to America by British agency—particularly that of the East India Company, whose charity towards us, in making us sensible of a new and unpardonable sin of the deepest dye, which the Bible winked at and tolerated, would be rewarded by a monopoly of the cotton and sugar culture, in their vast conquests in Asia. Are not the very parties who are now urging our northern people to set at defiance the Fugitive Slave Law, and to agitate its repeal, the very parties in the interest of the East India Company, who first stimulated our northern people to commence a system of aggression against the southern states some fifteen years ago, by establishing anti slavery societies in this country, similar to those in Great Britain, which played such a conspicuous part in sacrificing the West India planters to promote the aggrandizement of British Asia?

The slave-labor of the West Indies coming in competition with East India sugar, it was policy to give it up to encourage the larger interest. Hence slavery was abolished over a territory about half as large as South Carolina, (the whole of the British West India Islands only having seventeen thousand square miles, that of South Carolina, thirty-three thousand,) and containing a population not exceeding a sixth or seventh rate state in our Union, in order to open a way for the establishment of the sugar culture on a grand scale in a vast sugar region in Asia, having a territory of upwards of one million of square miles, and one hundred and fifty millions of inhabitants.

The experiment is succeeding. To succeed with cotton, and every other southern product in British Asia and New Holland, it is foreseen that nothing stands in the way but the associated or slave-labor of the United States, Brazil and Cuba. Already do the East Indies, according to Leonard Wray, Esq., produce more sugar than the United States and the British West India islands together. The same parties, who moved the British Parliament to sacrifice West India interests, have been for more than fifteen years sowing the seeds of discord between the North and the South on the subject of slavery. No sooner was the policy of abolishing that *institution* in the British West India Islands, to extend the culture of sugar, (throughout a country that a line from Boston to New-Orleans would

* See Family Library for Natural History of the Ants and their slavery institutions.

not reach across,) carried into effect, than forthwith George Thompson, member of Parliament, the British Anti-Slavery societies, and all the writers, lecturers and agents in the interest of the East India proprietors, with one accord, made a simultaneous movement on the United States, proclaiming war against slavery. They boldly planted the anti-slavery banner in our northern states, and instigated the formation of abolition societies in our country, bound by their organization to wage an uncompromising warfare against the institutions of the South.

Has the foreign influence, that presumed to meddle with American institutions, been moved thereto by motives of humanity? Malcom, the celebrated Baptist preacher of our own country, who traveled all over the East Indies, found there ten millions of people in the most odious personal bondage, whom the West India emancipation act expressly reserved in slavery at the very time that the abovementioned parties were prosecuting the most violent hostilities against negro slavery in the United States. The greater part of those persons in our country, who would, if permitted, interfere in the affairs of Cuba, have the political aggrandizement of that island, the happiness and best interests of its inhabitants, at heart. Can the same be said of George Thompson, member of Parliament, and the vast multitudes whom Great Britain has so long permitted, if not incited, to interfere with American affairs, in trying by every means to break down a political institution in the United States, which, if they could succeed in, that great foreign power, at peace with us, can hardly help knowing, will rend our Union into fragments, destroy our political strength as a nation, break up our commerce, manufactures, and agriculture, and convert our happy land into a field of desolation?

The foreign enemies of American republicanism and the interested East India proprietors, long ago found out that the conscience of the Puritans is particularly tender on the subject of southern slavery; hence they have been, and still are, continually stinging it by upbraiding them as guilty of sin for being in the Union with slaveholders, and for not resisting, by violence and blood, the execution of the Fugitive Slave Law.

The northern people do not want the fugitives as constituent parts of their own society; they had rather not have them, if their conscience was not continually stung and gored by such John Bulls, as George Thompson, the East India proprietors, and the members of the British and Canadian Anti-Slavery Societies, to keep the poor fugitives as a sign of their having washed their hands of the sin and guilt of slavery—a sign they know would

be, as matters now stand, the death warrant of our Union. Aggressions on southern rights and interests, thus brought about, have awakened the South to the necessity of adopting some effectual means of repelling them. Hence have arisen all the differences between the two sections.

The southern mind has adopted the *a posteriori* method of reasoning on the slavery question, and the northern the *a priori*. These two methods of considering the subject have brought the two sections to exactly opposite conclusions. An admixture of the two modes of reasoning for a long time gave the great mass of the people, North and South, mixed and indefinite notions on the merits of the question. The *a priori* logic leading them to look upon domestic slavery as an evil, while the facts, observations, and experience of the inductive mode of investigation clearly proved, that if it be an evil, it is one of those theoretical evils for which there is no remedy without incurring greater evils—in other words, no evil at all. Yet the admission of its being an evil, by distinguished southern men, prevented the merits of the question from being looked into by the public. Such persons contented themselves in waiting on time and circumstances for some safe and effectual method of removing the evil, like many good people are waiting for the millennium to remove the evils incident to the relation of master and apprentice, parent and child, husband and wife.

While Mr. Jefferson was casting about for some remedy to remove the evil of having the country filled with a slow-motioned, inefficient, profitless black population, who, for want of brisk motion of the body and attention of mind, could not compete with the white man in the ordinary branches of industry and the arts, and who were half naked and starved near his own door, the rich cotton, cane and rice fields were opened in the burning South, where free white labor is much farther behind slave labor in efficiency, than the latter behind the former in other branches of industry in a cold climate. The slow-motioned, sleepy-headed negro population, whom Mr. Jefferson did not know what to do with, and to use a common expression, "could not earn their salt," suddenly became, by the introduction of cotton, cane and rice, superior to the white man in efficiency—benefiting themselves, enriching their masters, the whole South, and the entire Union. The products of their labor being thrown into the markets of the world, became a new and important basis of manufacturing and commercial wealth—products which their labor alone could produce, in sufficient abundance and cheapness, to supply the wants of mankind.

Neither party, North or South, has viewed the question of negro slavery in a philosophi-

cal point of view. It has been mere experience on the one side, and mere theory on the other. You and the rest of our statesmen have been so well satisfied with the working of our political system, that you and they seem to have been content to direct and guide it, without looking into comparative anatomy for the physical differences in the population that would explain the paradox of slavery in a free republic, and demonstrate the reason and justice of our political institutions, in not according to all classes the same privileges. Much of the knowledge, in regard to the physical differences between our white and black population, is confined to a few scientific men in private life, and to those persons in the South who have had opportunities of acquiring it by observation, but have not the requisite acquirements and opportunities for diffusing it.

Knowledge, to be diffused among the mass, and to be brought into practical use, must first pass through the alembic of some superior intellect to be refined and purified. I cherish the opinion, that if you were to seek for that particular kind of knowledge, (touching the true nature and character of our negro population, and on which our peculiar southern institutions rest as a basis,) you could find it, and when found, could diffuse it. Its diffusion would be like oil on the troubled waters, quieting the conscience of the North on the subject of slavery, or at least starting a new train of thought, that would naturally lead the northern mind, step by step, to a quiet conscience and freedom from responsibility for negro slavery in the South. Northern agitation and aggression would cease, and southern agitation and secessionism would also cease, as soon as the provocations causing them should be removed, or even a fair prospect of their removal, by a new train of thought started in the North by a northern political chieftain renouncing the prejudices of education, and coming out boldly and plainly for the truth. South Carolina would not now stand alone with secessionism on her banner, if you, a northern statesman, whose politics have heretofore been in opposition to the southern majority, had not taken the noble stand you did take on the laws and Constitution, and boldly faced northern fanaticism.

Believe me, your course in facing political death, in defying fanaticism in the North, and touching it with the spear of Ithuriel, has restrained the hands ready to unfurl the secession banner in almost every state south, and, but for you, would have been unfurled ere this. One step further, and you restrain South Carolina herself, not by drawing the sword, but by diffusing thought. By diffusing thought, you defended the laws and the Constitution, by bringing northern patriots into the field to repel the aggressions of northern fanaticism.

By diffusing thought, you could bring over

America to your standard, in defending the foundations on which republicanism, the laws, the Constitution, and the Union, are constructed. To go into an analysis, or to invite an analysis of the slavery material in that foundation, so as to ascertain its different composition, and nature, would be to take the desired step, that would do more to strike down the secession banner in South Carolina, than could General Scott, at the head of the largest army that was ever mustered into the service of the United States.

If South Carolina were to see the northern people, under a northern leader, discarding Jacobinical sophisms, and examining into the question, as our fathers did, for the best political position for the black population, by the light of experience and the inductive method of arriving at truth, she would pause long and deliberately before making the fearful experiment of secession, because there would be grounds of hope that that method of investigation would ultimately revolutionize northern political opinion, by demonstrating that *the negro is not a white man painted black*, as they have heretofore supposed, but a different being, of a different nature; and affected in directly opposite directions from the white man by the things called liberty and slavery. The public sentiment so predominant at the North, that the negro can be *washed white* by personal freedom, political and social equality, and that it is a sin and a shame to Christianity, republicanism and humanity, to let him remain so long unwashed, has led to a system of fanatical aggression at the North, which South Carolina believes will bring swift and sure destruction upon her, if she remains in the Union, and hence she is preparing to leap, as from a ship on fire, into the gulf of secessionism. She is deaf to the recital of the dangers she may encounter out of the Union, believing that sure destruction awaits her in it. But if public sentiment North could be directed, by the force of some strong and commanding intellect, into another channel of thought, calculated to lead to the truth, she would have hope—hope would make her pause, as she only leaves the Union because she sees no hope of safety in it. The North could not object to a consideration of the question on the higher law basis, and to inquire into the reasons why our fathers, anterior to the Revolution, during that period and at the formation of our present Constitution, kept the negro under the same institutions he is still under in the South. These reasons will be found, not so much in this inferiority of mind, as in a marked difference in his disposition and nature from either the white man or the Indian.

Observing that, by the operation of some higher law, he was essentially different from any other human being, they retained

him under institutions compatible to him, but incompatible to either the white man or the Indian. Without taking sides in the controversy, either for the North or the South, but only for the truth, you might render the country a great service, by directing public attention to the only safe and sure mode of finding the truth. The truth found would, no doubt, put South Carolina and Massachusetts where they were in the days of the Revolution, shoulder to shoulder in the cause of American liberty, power, and progress. A misunderstanding between the North and the South has arisen, and those who were foremost in the Revolution for union and concert to make America strong, are now foremost in those measures of disunion and strife, that, if persevered in much longer, will make her weak and contemptible in the eyes of the world. The one party claims as rights what the other party does not regard as rights—the right of property in man—the right to hold man in bondage.

The one claims the right by virtue of Nature's laws, the lessons of experience, and the laws of necessity. The other denies the right on the abstract principle, that presumes that all men are alike, and entitled to the same privileges and immunities.

Both parties, except that portion under anti-republican and foreign influence, desire the truth. Both want justice, and nothing more. Both are seeking the welfare of the negro, and wish to reach it without destroying their own—the one contending that his welfare lies in slavery, and the other in freedom. As the premises cannot be settled by the parties themselves, it would be better to refer them to the umpirage of comparative anatomy, physiology, chemistry, and history. Comparative anatomy, if interrogated whether the organization of the white and the black man be the same or not, could put the question beyond controversy, and leave the *North and the South nothing to dispute about*. Physiology could say whether the laws governing the white and black man's organism be the same or different. Chemistry could declare whether the composition of the bones, the blood, the flesh, skin and the secretions, be composed of the same elementary substances, in the same proportions and combinations, in the two races, or in different proportions and combinations.

History, likewise, could throw much light on the subject of what has proved best for the negro. Mr. Seward and the higher law advocates in the North could not consistently object to your recommending the higher law mode of investigation, and settling for ever this vexed question. I venture to predict that it would show him the higher law, which keeps the negro in servitude, written

in his organization. The abolition divines, who preach the higher law, could discover the same thing that anatomy will reveal, written in Hebrew in the ninth chapter of Genesis, and in other places in the Bible. The common higher law abolitionists, who have not time to devote to the dissecting-room or to the Hebrew, could see the higher law any night of their lives, by looking at a negro asleep, breathing the mephitic air called carbonic acid gas, manufactured in his own lungs, being caught and confined by the covering the higher law compels him to put around his face. The effect of confining, by covering his face, his own breath, to breathe over and over again the whole night and every night of his life, produces certain effects upon the blood and the brain requiring the chemist and physiologist to explain. But that explanation would only be repeating what comparative anatomy discloses, history tells, chemistry proves, and the Bible reveals, that by a higher law than the Union, the Constitution, or any other human enactments, the negro is a slave.

The negro being a slave by Nature, no legislation is necessary to regulate slavery, or to say where it shall exist or where it shall not exist. The institution will regulate itself under the higher law of Nature, if that law be not obstructed by unwise legislation. Under the higher law, and not by any act of the Federal Government, it was abolished in the northern states. It proved, by experience, to be an evil in those states, because, from the nature of the products and the climate, it was found to be much less expensive to purchase free white labor than to be burdened with the cost and care of supporting such inefficient, wasteful, and slow-motioned laborers, as negroes were found to be.

Hence, after the black population were somewhat diminished by being sent South, the balance, not very numerous, were emancipated. The emancipation acts of the northern states were supererogatory, as in most cases the northern masters were glad to let their slaves go free before the time fixed by law, finding them to be a tax and a vexation.

Delaware and Maryland are now in a transition state, preparatory to becoming free states—selling their slaves to southern planters, until their numbers be so far reduced as to make emancipation of the balance safe and practicable.

But if they had no outlet open for thinning out their negro population, they would be compelled to keep them in slavery, and encounter the evils of a somewhat more inefficient, careless and expensive class of laborers, than incur the greater evils of being

overrun by a heavy population of disorderly, worthless, and unproductive free negroes.

Negro slavery, from natural laws, if not interfered with, must ultimately be confined to that region of country South, where, from heat of the climate and the nature of the cultivation, negro labor is more efficient, cheaper, and more to be relied on than white labor. Virginia is a slave state, yet natural causes have almost excluded slavery from the larger half of her territory. Why not, therefore, give the whole subject up to the higher law of Nature to regulate?

If negro slavery, from mistaken notions, be carried into a state or territory where slave labor is less efficient and profitable than white labor, natural causes will correct the mistake, as they have done in the northern states and in Alpine Virginia, by forcing it out again.

On the other hand, no good, but much evil, will result from prohibiting slavery in any state or territory, where, from heat of the climate, and the products of the country, no other kind of laborers can do the required drudgery-work in the sun *and live*. The labor requiring exposure to a mid-day summer's sun, from the laws of the white man's nature, cannot be performed in the cotton and sugar region without exposing him to disease and death; yet the same kind of labor experience proves to be only a wholesome and beneficial exercise to the negro, awakening him from his natural torpor to a new life of pleasure and activity. In Africa, the West Indies, as well as in this country, experience proves that negroes will not labor unless compelled by the authority of a master. The question is, shall the white man bring disease and death upon himself by performing drudgery-work in the sun, or make the negroes do the work—the sun, which sickens and kills him, being a luxury to them? He in the shade, laboring and managing for their benefit as well as his own; they in the sun, working for the benefit of the common household, of which they form a part, constitutes the relation of master and slave—an institution designed by *Nature* to be beneficial to both parties, and injurious to neither. Here, in New-Orleans, the larger part of the drudgery-work requiring exposure to the sun, as rail-road making, street-paving, dray-driving, ditching, building, &c., is performed by white people. The sickness and mortality among that class of persons who make negroes of themselves in this hot climate are frightfully great; while the mortality among all those classes enjoying the advantages of the relation of master and slave, you will be surprised to hear, is not greater—is not as great—as among an equal number in your own city of Boston. Our tables of mortality, compared with the cities of the northern states, prove that the mortality among children is not as great here as there; thus show-

ing that the great aggregate mortality of New-Orleans above that of the northern cities, is not owing to the climate or locality being unfriendly to human life, but is mainly owing to a large class of persons in this city violating Nature's laws by making negroes of themselves. Our tables also show that, in all over fifty, the mortality is less than at the North—for the plain reason, that neither children nor old persons are much exposed to the sun. Lest it be thought that all the advantages of the relation of master and slave might, at least, be attained for what you call the colored people, if emancipated under favorable circumstances, permit me to inform you, that emancipation in this city, many years ago, took place, from time to time, on quite a large scale. Great numbers of the colored people were not only set free, but were left handsome fortunes likewise. All of the pure blood, unlike the slaves, diminish in numbers, and those of the mixed race promise ere long to become extinct.

The excessive mortality in this city is derived from the free colored persons who have no masters to take care of them—from the half free slaves, without masters to look to them, who are permitted to wander about and hire their own time, as it is called—from the foreigners who arrive here in a sickly condition from Europe; but mainly from the white people who make slaves of themselves by performing drudgery-work in the sun. When the mortality occurring among these different classes of the population is subtracted from the aggregate deaths, the result is, that there is less mortality among all that large class, both of the white and the black population, who hold the relation of master and slave, than among an equal number in the northern cities. This brings me to a very important truth I wish to communicate to you, although I know your prejudices, in common with a large number of the northern people, are very strong and bitter against the institution of negro slavery in the South. You have, no doubt, been accustomed to look upon the South as very sickly and unfriendly to human life in comparison to the North, without divining the true cause for its bad reputation for unhealthiness abroad. Thirty-three years of observation and experience in the treatment of diseases in the cotton and sugar region have enabled me to generalize facts, and to discover the important truth, not less important in a political than in a medical point of view, that among all that large portion of the southern population holding the relation of master and slave, the sickness and mortality are not greater than among an equal number of people at the North. In other words, negroes, who have masters to take care of them, are as healthy in the South as any people in the world; and the white people in the South who have negroes to work for them, enjoy generally about as good health, *ceteris paribus*, as those of Pennsyl-

vania or New-York. On the other hand, all those negroes who have no masters to take care of them, and all those white people who have no slaves to work for them, but make negroes of themselves by doing drudgery-work, exposed to the hot summer's sun of the cotton and sugar region, are cut down by disease and death like grass before the scythe of the mower. Hence it would appear, that in the cotton and sugar region, Nature has ordained that the negro shall serve the white man, and the white man shall take care of the negro.

Obedience to this law being rewarded with the health, comfort, peace and happiness of both parties, the security of the state, and its strength in war, and disobedience punished with disease, death, and anarchy—I will close this long communication, too long, I fear, for your patience, but too short for the subject, by an illustration from an actual matter-of-fact occurrence. A company, in making a neighboring rail-road running through the battle-ground below this city, had a standing order for fifty laborers to be sent every day during the hot season of the year to supply the places of the sick and the dead. Yet a much larger number of negroes in the same vicinity, at similar kind of work in the same hot sun, were as healthy as any people in your native New-Hampshire.

You are thus told everything, in a word, that I have been trying to tell you, of the imperative necessity of negro slavery in the South. Whether in the Union or out, law or no law, abstractly right or wrong, it is a question with the people of the South they will not debate, as it is a question of life or death. But where does this illustration of the important truth of the deadly effect of practical abolitionism, in putting the white man in place of the negro at hard drudgery-work in a hot southern sun, come from? It comes as a still, small voice, to whisper to northern prejudices, that black slavery, South, is better than white from the field of American glory—from the very spot where the physical power of the greatest empire on earth, imposingly displayed in a well-organized and vast invading army, fell shattered before the American rifle. Without taking part for or against slavery in the South, (for which you nor any other northern man is responsible, or have any right to meddle,) but only for the truth, and the Union the truth supports, you have only to make that voice heard and understood by your countrymen to gain a greater victory over the snake-haired Discord than an artful foreign diplomacy has engendered between the North and the South, than you gained over Hulseman and the Austrians, or than did Andrew Jackson over our country's invaders on the same holy ground that is now speaking to you.—*Dr. Cartwright*—(addressed to *Daniel Webster*.)

SOUTH—HOW AFFECTED BY HER SLAVE INSTITUTIONS — SLAVERY AT THE SOUTH—WHAT ELEMENTS OF CHARACTER AND CIVILIZATION IT DEVELOPS, ON BRITISH AUTHORITY, AND HOW THEY COMPARE WITH THOSE OF THE NORTH.—If there is one subject, (says Mr. Mackay, of the Middle Temple,) “If there is one subject on which, more than another, misconception prevails in this country, and on which prejudice overrides the judgment, and philanthropy discards from its consideration every notion of practicability, it is that of slavery in the United States. On most questions connected with America, there is a disposition in many quarters to jump at unfavorable conclusions; but on no subject so much as on this, is decision so independent of previous examination into the circumstances of the case. European prejudice fastens eagerly upon slavery, as a welcome crime to charge upon the American republic; and philanthropy, in the headlong pursuit of its end, defeats its own purpose, by stumbling over the difficulties to which it is wilfully blind.” “Few understand the merits of the case, because few can examine into them. In the general cry against American slavery there is some justice, but more of prejudice and mistaken zeal.”

Thus speaks Alex. Mackay, Esq., barrister-at-law of the Middle Temple, and late traveler in the United States; and, no doubt, when he thus writes, honestly supposes himself entirely exempt from the overriding prejudice and misconceptions of which he speaks. He is, evidently, what is considered a liberal, intelligent gentleman, apparently desirous not to misrepresent, but to sustain himself above the vulgar prejudices of his country and times. But, notwithstanding, he, too, sees through a glass darkened and colored by prejudices that unconsciously exist in his mind. He, too, thinks slavery a great evil, a *crime*, in the South! Blackstone should have taught him that there must be *intention to commit*, to constitute a crime. The crime was long ago committed by his country, and the necessity and evil (if any evil) has been put upon the South, not by themselves, but by his country, and for her benefit, as the Bethune treaty will still show in black and white. Mr. Mackay thinks “it hangs about the *social and political* system, like a great tumor upon the body, which, however, cannot be suddenly cut away without risking a hemorrhage which would endanger life,” and, therefore, very reasonably concludes that we, whose lives are in danger, ought to have the right to determine when the experiment should be made. But our Northern brethren, who, for good and valuable consideration received, have signed the titles, and warranted and guarantied our possession and full enjoy-

ment of our "tumor," without let or hindrance, for ever, would now not allow us one day for consideration, but are resolved, *volens volens*, for an instant operation, though it should be attended with the trifling contingencies of lock-jaw and death. Thus, when Napoleon was endeavoring to compel the agriculturists of France to cultivate beet for sugar, a caricature was published, representing a nurse thrusting a long beet down the throat of a struggling infant, saying at the same time, "Take it, honey—take it; your daddy says it is sugar." People, as well as children, should be grateful for favors.

The great objection to slavery, say these our benefactors, is the immorality of our institution. And yet the morals, male or female, of the South, fear no comparison with those of the North. We verily believe, that the principles in excess, as taught by Dr. Franklin, have been the fruitful source of Yankee tricks, and have done more to degrade American character abroad, and to sow divisions at home, than slavery and the slave trade combined. But, say these disciples of Franklin economy, slavery degrades the character of the master, takes away his "soft sauder," and while it renders him effeminate, it at the same time makes him passionate, ungovernable and vindictive; arrogant, imperious and self-willed; cruel, tyrannical, sensual, irreligious and voluptuous; languishing, incapable and ignorant; neglectful of his duties, moral and political—in short, it leaves him devoid of virtues, divested of charities, and deprived of the kindly sympathies which connect man to his fellow-man. This, and more than this, we have seen repeated over and over in the northern catalogues of our demerits. Such might have been the opinion of the great mass of the people and politicians of Great Britain in '75, as to the character of their brethren in the southern slave-holding colonies of America, and may have helped to precipitate their government into those unwise and tyrannical measures which led to their separation and independence; but such could scarcely then have been the opinion of the people of Massachusetts when they sent their Josiah Quincy to southern slaveholders to solicit their aid. They were not then regarded, either in England or America, as inferior in the great virtues that distinguish a free people. Let Mr. Burke speak, for there can be no higher authority in England or America. After speaking of that love of freedom, the predominating feature which characterizes and distinguishes the whole of the American colonies, every one of which were then slave-holding colonies: "They are, therefore, not only devoted to liberty, but to liberty according to *English ideas*, and on English principles. *Abstract liberty*, like other mere abstractions, is not to be found—every nation has formed to itself some fa-

vorite point, which, by way of eminence, becomes the criterion of their happiness." After speaking of the probability of resistance from the northern colonies, on account of their dislike of the Church of England, he proceeds to say, that the same reason did not apply to the southern colonies, for the Church of England formed there a large body, and had a regular establishment. "There is, however," says he, "another circumstance attending these colonies, which, in my opinion, fully counterbalances this difference, and makes the spirit of liberty still more high and haughty than in those to the northward. It is, that in Virginia and the Carolinas they have a vast multitude of slaves. These people of the southern colonies are much more strongly, and with a higher and more stubborn spirit, attached to liberty, than those to the northward. Such were all the ancient commonwealths; such were our Gothic ancestors; such in our days were the Poles; and such will be all masters of slaves, *who are not slaves themselves*. In such a people, the haughtiness of domination combines with the spirit of freedom, fortifies it, and renders it invincible." "There is no way open," says Mr. Burke, "but to comply with the American spirit as necessary; or, if you please, to submit to it as a necessary evil." Can the North not see the applicability of this advice to their own encroachments upon the spirit of the South, and the probable result of similar contempt and injury?

The history of our Revolution fully proves the truth of Mr. Burke's opinion. The talent, the courage, the patriotism—in short, the virtues, in every relation, brought out by that event, in the greatest slave-holding states, challenge comparison with those in any other colony. Look at the history of the states, from Maryland inclusive, South, where slavery then most abounded. They furnished Washington, Patrick Henry, the Lees, Carroll, Mason, the Pinckneys, Davy, the Rutledges, Sumter, Marion, Campbell, Shelby, and a host of others, who may well be contrasted with any that can be claimed by the North, although their pension-list is so much smaller than that of the North. There is certainly one thing in which the people of Massachusetts have excelled all at the South—their universal response when the pension-roll is called. Besides, the South had no Arnolds; and from the formation of our Union to the present day, our Jefferson, Madison, Randolph, Tazewell, Gaston, Macon, Lowndes, Cheves, Calhoun, McDuffie, Preston, Legaré, Crawford, Forsyth, Troup, &c., &c., need not fear a comparison with their Quincys, Otises, Websters, Adamses, Van Burens, Clintons, Sewards, Sergeants, Binneys, or any others they can name. The superiority of southern over northern statesmen,

from the very origin of the government, has been admitted by Mr. Alexander Everett, and the reasons for it assigned not much to the credit of the North. Our cities are quite as moral as theirs; and as large a proportion of persons of character, education, and good manners, can be found in southern cities as in those of the North. If the North excels the South in some things, the South, in her turn, excels in others. No doubt the North excels in manufactures and the mechanic arts, ship-building and navigation; but this, we insist, is owing to position and climate, and not to any difference growing out of our institutions; in other words, the difference of institutions has grown out of position—the simple result of interest, and nowise the fruit of “abstract liberty.” We, for generations, have been accustomed to our institutions, and find them, in our humble opinion, best for us. Fate has thus placed the European and African races together, and thus live or die, they must, and we solemnly believe that any attempt to alter that relation now by the indiscreet hand of a third power, must produce the greatest calamity which could befall either. “It is of course perfectly easy (says the learned and pious Dr. Arnold) to say that we will have no slaves, but it is not quite so easy to make all the human inhabitants of a country, what free citizens of a country ought to be; and the state of our rail-road navigators and cotton operatives is scarcely better for themselves than that of slaves, either physically or morally, and is far more perilous to society.” “It is,” says the same writer, “the interest of every employer to get as much work as he can done for the smallest sum possible. Where is the church most hated? Where is the aristocracy most hated? Where is the alienation of the poor from the rich most complete? The answer will always be: wherever the relation between them has been most exclusively that of employer and employed. In other words, where the relation has been most purely mercenary. *I do not say like that of master and slave, but actually worse.*” The Dr. in another place says: “The mixture of persons of different races in the same commonwealth, unless one race has a complete ascendancy, tends to confuse all the relations of life, and all men’s notions of right and wrong; or by compelling men to tolerate in so near a relation as that of fellow-citizens, differences upon the main points of human life, leads to a general carelessness and skepticism, and encourages the notion that right and wrong have no real existence, but are the mere creatures of human opinion.” The same great authority tells us also, that among the races of men, some are much more easily distinguished than others; “being incapable of taking in higher elements, [by crossing,] they dwindle away when brought

into the presence of a more powerful life, and become at last extinct altogether.”

To express the belief, with the learned and scientific Morton and Agassiz, that the negro is a different and inferior race to the white, seems to be thought by some of our learned divines, quite a declaration of infidelity. Some of the most pious and learned gentlemen, lay and clerical, that we know, think otherwise; and on the high Christian authority of the late learned Dr. Arnold, we feel that we may safely rely, without doing violence to the piety of any one. Dr. Arnold, in his *Miscellanies*, p. 147, 160, 161, says, that “he conceives it to be a principle most important to the right understanding of the whole of the Old Testament, that the revelations made to the Patriarchs were only partial, or limited to some particular points, and that their conduct must be judged of, not according to our knowledge, but to theirs.” “It is very true,” says he, “that there are some things in the first chapters of Genesis, which we cannot understand, and part of it possibly may be a sort of allegory or parable of which we have not the key.” Similar views have been expressed by some of the ablest clergymen in England and America, as to astronomy and geology. With some, more bigoted than wise, in our poor opinion, even the theory of Malthus, on population, has been considered as sufficient evidence of the infidelity of that distinguished divine. But Dr. Arnold comes in there to his rescue also, for he says, that he thinks God intended man to multiply in excess of food, or with a tendency that way, as a punishment for his disobedience, and as a consequence of his expulsion from the garden of Eden—and that the theory of Malthus is founded in Scripture, instead of being, as some suppose, anti-Christian. (*Misc.* 160, 161.)

Having been long accustomed to its institutions, the South is satisfied with them. It feels fully competent to manage its own affairs, and only seeks to maintain its constitutional equality. Let the North boast of its excellence in the various industrial pursuits; we do not envy her, but rejoice in her success. We are content with our agricultural products, by which they and the rest of the world are most cheaply provided; agricultural products, too, upon which the lives of many of them depend. Let any one visit the Narragansett country of Rhode Island, look into its interesting history, by Mr. Updike, and inquire into the manners, habits, and characters of its ante-revolutionary, and of its present people, and see what a contrast he will find in favor of the former. We have seen, known and admired some of the best specimens of its present inhabitants, and have heard them acknowledge their general degeneracy; and though admitted by all to be now the very best samples, yet it is

observed by one of their intelligent old neighbors of this particular family, "that although their family had kept up the standard as well as any, yet that they were as far below that of their ancestors, both *in body and mind*, as those who had depreciated most were below us." (*History of the Narragansett Church*, 326.) The reason is apparent. It had been the most thorough slave country in New-England; the inhabitants had kept up the habits and education of English gentlemen; they cultivated their lands, and made most of the stone walls now existing; and these old walls may be, now, distinguished for their decided superiority, in neatness and durability, over those since made. They lived in large and commodious mansions, many of which remain to this day, with their old aristocratic air, quite superior to the little "slice-of-blocks," which the manufacturer now hurries up around the factory. They were hospitable and fond of society, simple in their manners, and elevated in their sentiments, surrounded by slaves, with abundance of horses and the provisions of life; they were a noble people and well may their sons love to dwell upon their memory, and to snatch from the ruinous progress of time every relic and picture of these olden days, however painful it must be to them to confess their "degeneracy from the old Narragansett race."

The revolution, and consequent abolition of slavery, have rendered desert many sweet spots in that country, which were once the gardens and happy residences of the most polished and elegant people. Her fields are no longer cultivated. Her inhabitants are now crowded around her heated factories, breathing fetid air, instead of the sweetest that nature affords. Her great men are gone. Her gentry sadly diminished. Lovely and interesting country, why could not these "desultory men, ever pleased with change" and false philanthropy, have placed their hands elsewhere than on your happy lot? We confess, with our good old English Anglo-Saxon prejudices, we think that country good for little, whose institutions destroy or banish its country gentry, to make place for the factory and its inmates. As far as we have seen, we know no country whose agriculture is at a lower ebb than that of such parts of New-England as travelers generally see. We have been told that the system of manufactures would greatly improve agriculture and the condition of the agriculturist; but the provisions for most of the factory workmen are now imported from other states, and the neighboring farmer is undersold, whilst the price of labor is raised by the competition of the factories and farmers. "In a *social* point of view, (says Mr. Mackay,) there is this difference in America, between the North and South;

that in the former, society, in its narrower sense, takes its chief development in towns; whereas, in the latter, it is more generally confined to the rural districts. This difference is chiefly attributable to the different systems which obtain in the distribution of property, and to other causes, *social and political*, which will be presently adverted to. As a general rule, in the North and West, (where there is no slavery,) there is no such thing as country society, in the ordinary acceptation of the term. The land is divided into some lots, each man, generally speaking, occupying only as much as he can cultivate. The whole country is thus divided into farms; there are few or no estates. The rural population is, almost without exception, a working population, with little leisure, if they had otherwise the means, to cultivate the graces of life. As you travel through the country, you see multitudes of comfortable houses and good farming establishments, but no mansions. There is not, in fact, such a class in existence there, as is here known as the country gentry. A more unpromising set of materials from which to construct an elegant social fabric, can scarcely be conceived, than those northern and western farmers. Such is the phase which rural life presents in the North and West, with a few slight exceptions," &c. Yet of the 12,113,000 in these free states, by the census of 1840, "we have not the more recent one by us," not as many as two millions live in cities, while of 8,633,400 of the slave-holding states not more than seven or eight hundred thousand live in cities. We have just given Mr. Mackay's account of the state of society of this great mass of 10,000,000 of Northern and Western rural population. As to the South, he proceeds: "In the South, on the other hand, things assume a very different aspect. In the states of Maryland, Virginia, and the two Carolinas, Georgia and Florida, as, indeed, in all the southern states, land is possessed, as is with us, in larger quantities; the owners, as in England, generally living on their estates. It is thus, that although Baltimore has its social circle, the chief society of Maryland is to be found in the country; whilst in the same way, the capital of Virginia affords but a faint type of the society of the state. In the rural life of these two states, and in that of South Carolina, [he might well have added other states, and particularly Georgia, Louisiana, Florida, &c.] are to be found many of the habits and predilections of colonial times, and a nearer approach to English country life than is discernible in any other portion of the republic. The country is divided into large plantations, containing, in many instances, many thousands of acres, on which reside the different families, in large and commodious mansions, surrounded by

multitudes of slaves, and by all the appliances of rural luxury. It is thus that, removed as they are from the necessity of labor, and being interrupted in their retirement only by the occasional visits of their friends and neighbors, the opportunity is afforded them of cultivating all those *social qualities* which enter into our estimate of a country gentry. In the society of the southern Atlantic states, but particularly in that of the three last mentioned, there is a *purity of tone* and an *elevation* of sentiment, together with an ease of manner and a general *social aplomb*, which are only to be found in a truly leisure class. Any general picture of American society would be very incomplete, into which was not prominently introduced the phase which it exhibits in the rural life of the South."

Mr. Mackay seems to delight to dwell on the delightful society, male and female, of Virginia. Their easy grace, their frank hospitality, their warmth and fervor, proved very captivating to the cold Englishman. In the warmth of the moment, he declares that Virginia "is at once the type and the most striking specimen of the social development *peculiar to the slave-holding states of the Atlantic* seaboard; and it is only illustrative of such that I have here particularly alluded to the more distinctive features of Virginian society."

Speaking of Charleston, he says, "They have neither the pretension of the Bostonian, nor the frigid bearing which the Philadelphians at first assume about them, being characterized by a frankness and urbanity of manner which at once prepossesses the stranger in their favor, whilst they put him completely at his ease. This delightful phase of Charleston society is much to be attributed to its constant intercourse with the interior [the plantations in the country;] South Carolina, in its social characteristics, bearing a close resemblance to Maryland and Virginia." He also reminds the traveler that, as he proceeds south from Philadelphia, he will find the proportion borne by the negroes to the whole population increasing in each successive town which he enters. But in no place north of it are they so numerous, compared with the whites, as in Charleston; in 1840, they consisted of little more than one-half its entire population." And he might have said the same of the interior or rural districts of the state.

Mr. Hamilton, the author of *Cyril Thornton*, thus gives his evidence: "The poles are not more diametrically opposed than a native of the states south of the Potomac and a New-Englander. They differ in everything of thought, feeling and opinion. The latter is a man of regular and decorous habits, shrewd, intelligent and persevering; phlegmatic in temperament, devoted to the pursuits

of gain, and envious of those who are more successful than himself. The former—I speak of the opulent and educated, [usually, here, those owning the greater number of slaves, and most in communication with them,] is distinguished by a *highmindedness, generosity* and hospitality, by no means predicable of his more eastern neighbors." "In point of manner, the southern gentlemen are decidedly superior to all others of the Union—there is more *spirit* and *vivacity* about them, and far less of that prudent caution, which, however advantageous on the exchange, is by no means prepossessing at the dinner-table or in the drawing-room. When at Washington, I was a good deal thrown into the society of members from the South, and left it armed, by their kindness, with a multitude of letters, &c. Many of them were men of much accomplishment, and I think it probable that Englishmen unconnected with business would generally prefer the society of gentlemen of this portion of the Union to any other which the country affords."

Again: the Hon. Charles Augustus Murray, the son of Lord Dunmore, and accustomed to the first society in Europe, thus speaks of the native female society of New-Orleans, also the pure offspring of a slave-holding country. "In manners, the Creole ladies are gay, lively and unaffected, and altogether possess as much personal attraction as has fallen to the lot even of the fairest average of the fair creation." "I must also acknowledge that I had seen nothing so like a ball since I left Europe; the *contre-danses* were well danced, and there was waltzing without swinging, and a gallopade without a romp, [a pretty good test of society.] The supper was exceedingly handsome, and, in one respect, wine superior to most of those given at ball suppers in London," and not Wright's champagne, usually given on such occasions in London. On the whole, he went away much pleased with the mirth and agreeable manners of Creole society.

At Charleston, he says, "a gentleman must be difficult to please if he does not find the Charleston society agreeable. There is something warm, frank and courteous in the manner of a real Carolinian; he is not studiously, but naturally, polite; and though his character may not be remarkable for that persevering industry and close attention to minutiae in business, which are so remarkable in the New-England merchant, he is far from deficient in sagacity, courage or enterprise. Altogether, with due allowance for exceptions, I should say that the Carolinian character is more akin to that of England; the New-England to that of the lowland Scotch." And all this, notwithstanding the early abolition of the law of primogeniture, the frequent division of property among all the children, and the fact that they are now

educated at home, and no longer at Oxford or Cambridge. Mr. Murray proceeds to say, that, "while the society of Boston, Philadelphia and New-York is daily becoming more exclusive and aristocratic, that of the Carolinian capital is becoming more republican." "The tone of society, which here, as elsewhere, is under female control, struck me as being very agreeable; there is nothing in it of that formality or ostentation which I had been led to expect. I parted with much reluctance from some of my partners in this condemned dance; [waltz;] they were pretty, agreeable and intelligent, and, in one respect, have an advantage over most of their northern sisters, (if the judge is to be a person accustomed to English society,)—I mean, as regards voice; they have not that particular intonation and pronunciation which I had remarked elsewhere, and which must have struck every stranger who has visited the other Atlantic cities."

Such, we have shown from the best evidence, has been the character of southern slaveholders previous to the Revolution, and down to the present day. Let the value of institutions be judged by their fruit. They have always had English ideas of liberty, not French, and, as Mr. Burke has said, on English principles. They never believed that all men were born equal. They never favored "abstract liberty," but have had from the beginning their own system, and if you please, *their favorite point*, which, by way of eminence, has become necessary, and therefore the "criterion of their happiness." If they are "loud for democracy," it has been for the democracy of the white man, and not the negro. When they salute the negro as a political brother, they will treat him as such, and not as a dog.

All the greatest and freest people of antiquity were slaveholders. In Attica, Laconia, and all the other prominent states of Greece, the slave population was much greater than the free. The *people*, literally, (the citizens only,) were in every instance a small minority. Speaking of the character of the Romans, Lord Woodhouselee (Mr. Tytler) says:—"A virtuous but rigid severity of manners was the characteristic of the Romans under their kings, and during the first ages of the republic. The private life of the citizens was frugal, temperate and laborious, and it reflected its influence on their public character. The children imbibed from their infancy the highest veneration for their parents, who, from the extent of the paternal power among the Romans, had an unlimited authority over their wives, their offspring, and their slaves. *It is far from natural to the human mind that the possession of power and authority should form a tyrannical disposition.* Where that authority, indeed, has been usurped by violence, its possessor may, perhaps, be tempted to maintain it by tyranny;

but where it is either a right dictated by nature, or the easy effect of circumstances and situation, the very consciousness of authority is apt to inspire a beneficence and humanity in the manner of exercising it. Thus we find the ancient Romans, *although absolute sovereigns* in their families, with the *jus vita et necis, the right of life and death* over their children and their *slaves*, were yet excellent husbands, and kind and affectionate parents, humane and indulgent masters. Nor was it until luxury had corrupted the virtuous simplicity of the ancient manners, that this paternal authority, degenerating into tyrannical abuses, required to be abridged in its power, and restrained in its exercise by the enactment of law. By an apparent contradiction, so long as the paternal authority was absolute, the slaves and children were happy; when it became weakened and abridged, then it was that its terrors were, from the excessive corruption of manners, most severely felt. Even, however, under the first emperors, the *patria potestas* remained in its full force, and the custom of the *patres familias* sitting at meals with their slaves and children, showed that there still remained some venerable traces of that ancient and virtuous simplicity.

At the South, children are never put out to nurse, but are brought up from their birth under the careful and jealous eye of the mother, and, as with the Romans, *non tam in gregeio quam in sermone matris*. Southey, in one of his letters, speaks of Shadrach Weeks, (a servant boy of his aunt, with whom he lived,) to whose companionship he was accustomed when a child, for want of better: and, many years after, speaking of "Shad," he assures his friend, as if it were something extraordinary, or not to be expected, that were "Shad" still alive, and he should meet him, "be it where it might," he would return his salutation with a hearty shake of the hand. We wonder if there could be found a gentleman in the whole South, who would not, under similar circumstances, which are not uncommon, shake the black and dirty paw of Cuffee or Sambo?

A great source, we are sorry to say it, of popular prejudice in Europe and elsewhere against the slaveholding states, has arisen from a Yankee love of misrepresenting and blackening everything at the South. Some of our readers may remember the account given by Mr. Lyell, in his second visit to the United States, of the "abolitionist wrecker," in the railway cars between Chehaw and Montgomery. "At one of the stations we saw a runaway slave, who had been caught and handcuffed; the first I had fallen in with in irons in the course of the present journey. On seeing him, a New-Englander, who had been with us in the stage before we reached Chehaw, began to hold forth on the miserable condition of the negroes in Alabama, Louisiana, Mississippi, and some other states

which I had not yet visited. For a time I took for granted all he said of the sufferings of the colored race in those regions, the cruelty of the overseers, their opposition to the improvement and education of the blacks, and especially to their conversion to Christianity. I began to shudder at what I was doomed to witness in the course of my further journeyings in the South and West. He was very intelligent, and so well informed on politics and political economy, that, at first, I thought myself fortunate in meeting with a man so competent to give me an unprejudiced opinion on matters of which he had been an eye-witness. At length, however, suspecting a disposition to exaggerate, and a party-feeling on the subject, I gradually led him to speak of districts with which I was already familiar, especially South Carolina and Georgia. I immediately discovered that there also he had everywhere seen the same horrors and misery. He went so far as to declare that the pine woods all around us were full of hundreds of runaways, who subsisted on venison and wild hogs; assured me that I had been deceived if I imagined that the colored men in the upper country, where they have mingled more with the whites, were more progressive; nor was it true that the Baptists and Methodists had been successful in making proselytes. Few planters, he affirmed, had any liking for the negroes; and, lastly, that a war with England about Oregon, unprincipled as would be the measure on the part of the democratic faction, would have, at least, its bright side, for it might put an end to slavery. "How in the world," asked I, "could it effect this object?" "England," he replied, "would declare all the slaves in the South free, and thus cripple her enemy by promoting a servile war." The negroes would rise, and, although, no doubt, there would be a great loss of life and property, the South would, nevertheless, be a gainer, by ridding herself of this most vicious and impoverishing institution. This man had talked to me so rationally on a variety of topics so long as he was restrained by the company of southern fellow-passengers from entering on the exciting question of slavery, that I now became extremely curious to know what business had brought him to the South, and made him a traveler there for several years. I was told by the conductor that he was a "wrecker;" and I learned in explanation of the term, that he was a commercial agent, and partner of a northern house which had great connections in the South."

We have said before, that even Mr. Mackay is mistaken if he supposes that on this subject he can raise himself above this "overriding European prejudice," or avoid "stumbling over difficulties" created by his own imagination. We have shown, on the most respectable British authority, that in the rural society in the oldest and greatest southern

slave-holding states, there is "a purity of tone," and "an elevation of sentiment," "a high-mindedness, generosity and hospitality," rarely to be found at the North; and that "in point of manner, the southern gentlemen were decidedly superior to all others of the Union," and that "Englishmen, unconnected with business, would generally prefer the society of gentlemen of this portion of the Union to any other which the country affords." Again, the ladies are found quite as virtuous, gay, lively, unaffected, graceful, and possessing as much personal attraction as has fallen to the lot even of the fairest average of fair creation. Moreover, these degenerate, slave-holding gentlemen of the South, are, "in character, more akin to that of England," than those of New-England or of the North generally. Then, really, in the eyes of an Englishman, they have, in truth, *degenerated* less than any others in America; for what higher criterion of perfection can we have of mankind than an English gentleman! Why, and how is this? Without seeming to see where it leads, Mr. Mackay has given the true cause. "This difference is chiefly attributable to the different systems which obtain in the distribution of property, and to other causes, *social and political*." At the South, "the country is divided into large plantations, on which reside the different families, in large and commodious mansions, surrounded by slaves, and by all the appliances of rural luxuries. It is thus the opportunity is afforded them of cultivating all those *social* qualities which enter into our estimate of a country gentry." It is a mistake, in the author, to suppose that there has "obtained any difference in the distribution of property between the North and South." In both, the law makes a general distribution among all the children. We never knew a will to leave the testator's estate to one child to the exclusion of others.

To this "peculiar institution, then," (slavery,) is all this due; though it may not consist exactly with that "abstract liberty," which, as Mr. Burke says, is nowhere to be found. The South may be excused if it does not take every ass's advice, to avoid, if not that "favorite point," at least, that *necessary one*, which, by way of "eminence," has thus been acknowledged, by their enemies, to be "the criterion," not "only of their happiness," but of their *moral and social* superiority. We have long been taught by British literature to be proud of our Saxon ancestors, and we shall scarcely now be made ashamed of an institution under which they became so distinguished for the love of liberty.

This, then, is the evil, the crime, the tumor of Mr. Mackay, which causes so much shame to our social and political system! All the good is to be counterbalanced by Mr. Mackay's seeing "an aged negro—his hair *partially* whitened with years—waiting on the Senate of the United States! He, with other

negroes, daily swept the chamber—the black man cleaning what the white man defiles. Who will erase the moral stain that casts such a shadow over the republic? "Was ever such balderdash uttered before?" "Near him was the door leading into the gallery. It was slightly ajar. The ceiling of the chamber was visible to him, and the voice of the speakers came audibly from within. Some one was then addressing the house. I listened and recognized the tones of one of the representatives of Virginia, the great breeder of slaves, [the mother of that rural population so much nearer in approach to his English gentry, than is discernible in any other portion of the republic; a *phase* of society they all so much admire; so pure in its tone, and elevated in its sentiments, and social *aplomb*,] dogmatizing upon abstract rights and constitutional privileges. What a commentary was that poor wretch upon his language! To think that such words should fall upon such ears; the freeman speaking, the slave listening, and all within the very sanctuary of the Constitution!"

Did Mr. Mackay never behold an aged negro, his hair partially whitened with years, in the drizzling rain the livelong day, sweeping the mud from the crossing places in an English city, to let gentlemen, like Mr. Mackay, pass, without soiling their patent leather; while these humane gentlemen seldom drop one penny in "his crooked fingers," to quench the thirst or stay the hunger of the poor negro, (much more an object of pity than he, who has the enviable birth of sweeping the Senate chamber)? The writer of this article, on the contrary, a slaveholder from birth, yea, for generations, never passed one but he felt for him as a distressed fellow-countryman far from home and friends, whose demands for charity were more obligatory on him than those of the white man. Did Mr. Mackay never read the "Kufie Grinder?"

The English boast of their act of emancipation. The West Indies had friends so long as they had creditors in England. The act was, in fact, only a liquidation, at one-third of the price of the property, of the debt due by them to their British creditors. Their friends were thus bought up. To the poor of England, sugar was made scarce, taxes increased, and idleness made plenty in those islands. The twenty millions did not go, as it was pretended it would do, to pay the wages of the freed negro; nor did its disbursement disturb the exchanges of London, for it remained there, and Jamaica and her sister islands have been left to struggle in the wreck, made so kindly for them by their national government. Yet we are even now told by Mr. Mackay, "to how great an extent the tide is now, unfortunately, turning in Europe, if not in favor of slavery, at least of something very much approximating to it; whilst the public mind

is becoming imbued with the notion that, in the course which was pursued in regard to the West Indies, if we have not gone too far, we acted, at least, with rashness and precipitation."

We have given the character of the southern planters, as estimated by Mr. Mackay and others of his countrymen, not as they first conceived or were told when they first reached the North, but after being in society with them at home. Now, let us look over their travels, and notice the little inconsistent prejudices which they exhibit here and there before they have made this personal acquaintance, but are only receiving their impressions from our brethren at the North. Arrived at Washington, "what a motly heterogeneous assembly! Within a narrow compass you have the semi-savage 'Far Westerner,' the burly backwood's-man, the enterprising New-Englander, the genuine Sam Slick, the polished Bostonian, the adventurous New-Yorker, the staid and prim Philadelphian, the princely merchant from the seaboard, the wealthy manufacturer, the energetic farmer, and the *languid but uncertain planter*." In the library he finds "the exquisitely formed and vivacious Creole, the *languid* but interesting daughters of Georgia and the Carolinas, and the *high-spirited* Virginia belle, gushing with life, and light of heart; the elegant and springy forms of Maryland and Philadelphia maidens, and the clear and high-complexioned beauties of New-England." And again, in the House of Representatives, Mr. Mackay gives a sketch, characteristic of North, South, East and West. "What pages of history of the Union may be read in the varied physiognomy of the House! Close beside you is the *languid Carolinian*, accustomed to have everything done for him, at his nod." And yet, "in character, so much akin to that of England!" According to the notion of most cockneys, Carolina and Georgia are the only slave states, and Georgia and *Mobile* the only producers of short staple cotton: hence this peculiar *languor*, and authority of the nod, which, of course, can exist in no other slave state. Not three years since, a maker of gins, in Massachusetts, asked us if they made cotton in South Carolina? How comes it that the belles of Virginia and Louisiana are not languid?

But these same languid ladies Mr. Murray found, at home, "gay, lively, and unaffected, and possessed of as much personal attraction as has fallen to the fairest of creation." Mr. Mackay must excuse us, if, on this subject, we prefer the judgment of one of Queen Victoria's court, quite above that of a squire of any degree. Those who knew the members of Congress, from the Carolinas, in 1846-7, will smile at the idea of their

peculiar languor. In the Senate, he himself "foremost, for his pre-eminence in talents, purity of intentions and lustre of social qualities," places Mr. Calhoun, from languid Carolina. Could he have meant such men as Messrs. McDuffie, Badger, and Rhett? Mr. Mackay, perhaps, can reconcile these discrepancies. We think, however, that they show some inkling of old prejudices which still over-ride his judgment—similar climate and similar institutions produce similar characters. The same waiting upon, the same obedience to the nod, and the same climate, can scarcely produce "high spirit" in the Virginian, "vivacity" in the creole of Louisiana, and languor in the Carolinian and Georgian. What elevates and gives tone to the gentleman can scarcely make him languid. So much for the judgment of an impartial intelligent European upon the character of our people and institutions! It does not move us one jot to abandon them. Prejudice, everywhere, must cause contradictions and inconsistencies. We have no objection that the Englishman, or Northernman should prefer his own institutions. We are content with our own, and do not feel that we need their aid to amend them. "I can assert," says Mr. W. Thompson, a Scotch weaver, who traveled in 1841-42 in the southern states, (cited by Mr. Lyell,) and who lived and worked with persons of that class, where he was likely to see most—"I can assert, without fear of contradiction from any man, who has any knowledge of the subject, that I have never witnessed *one-fifth* of the real suffering that I have seen in manufacturing establishments in Great Britain, and that the members of the same family of negroes are not so much scattered as are those of working men in Scotland, whose necessities compel them to separate at an early age, when the American slave is running about gathering health and strength."

"Certainly," says Carlyle, "emancipation proceeds with rapid strides, and might give rise to reflection in men of a serious turn. West Indian blacks are emancipated, and refuse to work. Irish whites have long been emancipated, and nobody asks them to work, finding them potatoes. In the progress of emancipation, are we to look for a time when the horses are to be emancipated?" "Cut," says he, "every human relation which has anywhere grown uneasy, sheer asunder; reduce whatsoever was compulsory to voluntary; whatsoever was permanent among us to the condition of nomadic; in other words, loosen, by assiduous wedges, in every joint, the whole fabric of social existence, stone from stone, till at last, all now being loose enough, it can, as we already see in most countries, be overset by sudden outbursts of revolutionary

rage; and lying as mere mountains of anarchic rubbish, solicit you to sing Fraternity, &c., over it, and to rejoice in the new remarkable era of human progress we have arrived at." "My friends, I grieve to remind you, but it is eternally the fact: Whom Heaven has made a slave, no parliament of men, nor power that exists on earth, can render him free. No; he is chained by fetters which parliaments, with their millions, cannot reach. You can label him (the African) free; yes, and it is but labeling him a solecism—bidding him to be the parent of solecisms wheresoever he goes." "Benevolent philanderings!" "Seeds of that portentous disease now envenoming proletarian life!" "Socialism and Fourierism." —*McCord.*

THE SOUTH AND THE UNION.*—RESOURCES AND WEALTH OF THE SOUTH, AND WHAT SHE HAS CONTRIBUTED TOWARDS THE GROWTH OF THE NATION.—A citizen of a distant section of the confederacy, which is far nearer to the sun than your own, and is basking in his autumnal rays, whilst you are receiving refuge from shivering blasts, I am not ignorant of the people among whom I find myself, and need not now be informed of their growing greatness and power. We have heard of the ceaseless industry, and energy, and enterprise of the *North*, and they have become proverbial with us. We know that your shipping have circumnavigated the globe, and that the white wings of your commerce flap in every haven or islet where Christian or savage man asks in his necessities for bread or broadcloth, and that with a daring grasp you have seized from old Neptune himself the very trident of the seas. We know that the hum of your machinery is never hushed, and that ten thousand times ten thousand fabrics of ingenuity and skill are sent out each day from the granite factories, which, like feudal palaces, brown down upon your water-courses, or from the dense lanes of your metropolitan cities. We know that you have leveled hills, surmounted rivers and valleys, and even arms of the great sea, and intersected on a thousand lines your plains, and hills, and valleys, by those iron ways of civilization, the rail-road; and that your people, with their Pandora's box of "notions," fly hither and thither with a celerity God only knows how great! You dig down into the innermost bowels of the earth, and bring up coal and iron—you hew out of vast mountains huge *granite* blocks, and turn into *profit* even the very curses of God: your

* The above paper comprises but the corrected notes of an Address prepared to be delivered last summer by invitation at the *Fair of the American Institute*, New-York, and is of necessity crude and ill digested.

winters, which change streams and fountains alike into solid ice, and leave throughout the length and breadth of your wide dominions *literally* "no green thing alive." Your population has magnified and multiplied, and in its denseness been compelled to seek every available outlet, so that if they want a piece of ice at Timbuctoo, or a friction match at Nova Zembla, a Yankee trader will be found present there, and ready to supply the want. Your small towns swell into great ones, and your wonderful *Manhattan* rivals already the leviathans of the old world, which have had the benefit of ages of refinement and civilization.

Thus you are, people of the North; and here, to-day, as I look around me upon this extraordinary museum, which your farmers, your machinists, apprentices, artisans and manufacturers have fabricated in their ingenuity and enterprise, I seem to see, as through a diminishing mirror, and at one glance, your active and busy millions reflected, like that mirror, in which it is fabled one of the Ptolemies could see everything that was enacted in Egypt.

I will not deny that I am astonished and delighted, and that in my own region I would imitate very much what belongs to your character and career; but at the same time I must be allowed to say, in kindly intention, and with the utmost frankness, I am not ashamed to name that region in the same breath with your own. In the true spirit of my countrymen, I will even go further, and add, so nearly are the good things of this world balanced, and so much do I believe in *substantial* blessings we have the advantage, that I would be very far indeed from changing places with you in the confederacy! The sun shines not alone for the *North*, nor the stars—nor have you the winds, and the rains, and the dews to yourself, though the *snows* be all your own. Your people seem often, however, to think and to act as if it were otherwise, and God had made the world entirely for *them*, and no part of it for us, the "outside barbarians," beyond the "pillars of Hercules," interpreted to mean landmarks of "Mason and Dixon," the very outposts of all civilization and progress. Think not that we of the *benighted* South, like the British chieftain, when carried in the triumphant procession of the conqueror to Rome, are going to marvel in surveying all of your great and wonderful works, that you have envied us, notwithstanding our poor huts on the banks of the Potomac, or by the shores of the Mexican Gulf!

No, no, sirs: the South has nothing to blush for; and no son of hers may hold down his head when any people upon earth are in discussion. Whilst we are surprised, we are not envious of the career of any of

our neighbors, being able to show in turn a career of progress and advancement which, when correctly appreciated and understood, must satisfy the minds of the most exacting. We do not shun the comparison, but rather court and invite it; and here, to-day, in your swarming hive, and where I see smiles of proud triumph upon every lip, and hear every voice eloquent in your praises, I take high pleasure in calling up in vivid memory the region which I proudly call my home—the beautiful *inner* domestic life and high civilization which marks the society of the South—the pregnant cane-fields of the Lower Mississippi, the fleecy *gossypium*, overrunning its millions and millions of acres, in rank luxuriance, and at once giving food and raiment to the laboring millions of the old and the new world.

What have we of the plantation states been doing towards the extension of this great confederacy? How have our people been employed in every period of their history? What is now our social and political position, and what does the future promise us?

Fellow-citizens, much misrepresentation of the South, in every point of view, has been but too common, and we are ourselves somewhat at fault in not diffusing correct information which it is in our power to give. Ignorant or bad men have found capital in traducing our institutions and our people, or in underrating our position and importance in the confederation. I have supposed that in the great and liberal city of New-York, and before an institution which professes to be *AMERICAN*, that this subject of the South is one of the most interesting that could be brought into discussion, and that having invited me, a *Southern* man, to speak, you will freely and willingly hear me for my cause, and be patient that you may hear.

I begin with *COMMERCE*. It is by our commercial relations that we are known to the rest of the world. This rears for us fleets and navies, and from it come the revenues for the most part of the nation. Before the Revolution, or from 1760 to 1769, the southern colonies, with a less population than New-England, New-York and Pennsylvania, exported nearly *five* times as much produce. In the same period Carolina and Georgia exported *twice* the value of New-York, Pennsylvania and New-England. In the years 1821 to 1830, New-York alone exceeded these states. Under the policy of the federal government of protecting American ship-builders and ship-owners, who, from the peculiar nature of the country, are from the North, the larger portion of this trade has been attracted away from our ports and concentrated in yours. Yet is the case unaffected, if we may still trace the products of

our industry and our skill. Whatever may be the value of the great *foreign* trade of the nation, it is evident the *imports* of the country must only come in exchange for the *exports*, and that, if we had nothing to export, we could get nothing in return. Whence then does this nation seek its *exports*? Let us take the last five years. In 1846 the exports of *Northern* growth or manufacture, and much of this manufacture is out of Southern material, were \$27,331,290, whilst those of *Southern* produce, cotton, tobacco, rice, naval stores, &c., were \$74,000,000, or *three times as much!* In 1847 the Southern exports were \$102,000,000, against the Northern \$48,000,000; in 1848, \$98,000,000, against \$34,000,000; in 1849, \$99,000,000 against \$32,000,000.

Thus then is it, that the South is lending annually to the North 100 millions of dollars to be used by her as capital in conducting the foreign imports of the country, which nearly all come in your ships and to your cities, and enrich your people in an extraordinary ratio! Mr. Kettell, of New-York, estimates the profits which have been made by northern ship-owners upon southern productions, at \$40,000,000 in round numbers.

What has the South been doing in *GENERAL INDUSTRY*? She has carried the production of *COTTON*, which, at the close of the last century, was thought by Mr. Jay and others never could be an American product, to an extent which has distanced the wildest calculations; in the fineness and excellence of its production, excelled every nation upon earth, monopolizing the industry entirely to herself. Of what avail has been British competition in the East, on a soil adapted to the culture, with labor so cheap that a beggar in this country would starve upon its results, with the fostering regards of ministers and agents? Of what moment have been the rivalries of the Pacha of Egypt, of the West Indies and South America? *Southern enterprise* and industry have triumphed over all, and has, for a quarter of a century, monopolized the staple to themselves. The cotton wool and its fabrics of the South are even sent to China and to India, where the cultivation of the plant seems to have thrived as far back almost as the fabulous age of Fohi, and where it has been manufactured into fabrics so delicate, that the orientals call them "webs of woven wind."*

* In the table of supplies we may observe, that while other countries have been nearly *stationary*, our production has *advanced* with great rapidity. In twenty years our average crop has increased from 848,000 bales to 2,351,000, or nearly three hundred fold. If the period of 25 years, from 1825 to 1850, be divided into five equal intervals, the increase for each will be found to be 27, 37, 38, and 15 per cent. In the same time the production of all other countries has only risen from 383,000 to 440,000 bales, having absolutely declined in the last five years over 16 per cent. In the first period of five years, the

It is this *cotton* which employs the millions of New-England, and which throws the grave statistician of Old England, McCulloch, into ecstasies:

"Little more than half a century has elapsed since the British cotton manufacture was in its infancy, and it now forms the principal business carried on in the country, affording an advantageous field for the accumulation and employment of millions upon millions of capital, and of thousands and thousands of workmen. The skill and genius by which these astonishing results have been achieved, have been one of the main sources of our power. They have contributed in no common degree to raise the British nation to the high and conspicuous place she now occupies. Nor is it much to say, that it was the wealth and energy derived from the cotton manufacture that bore us triumphantly through the late dreadful wars; and at the same time that it gives us strength to endure burdens that would have crushed our fathers, and could not be supported by any other people."

I will next take the article of *SUGAR*. In 1804, when Louisiana was purchased from France, her sugar product, we have it on the highest authority, was next to nothing. Indeed, it was only in 1796 that Mr. Bore conceived, as Judge Rost assures us, the desperate purpose of making sugar, amid the general existing prejudice that the juice would not "grain." Crowds from every quarter came to witness his experiment, near New-Orleans. "Gentlemen, it grains," was the exclamation of the sugar-maker; and from the Balize to the Dubuque—from the Wabash to the Yellow-stone—the great, the all-absorbing news of the colony was, that "the juice of the cane had grained in Lower Louisiana."

Half a century has passed since then, and the population of our country increased from 4,000,000 to over 23,000,000 of people, whose consumption of sugar is more than half supplied by the industry of Louisiana, and will, in a few years more, in the rapid progress of the state, be entirely so supplied. —The gross product of the last five years has been nearly 1,200,000 hhds., against little over 600,000 hhds. in the previous five years. The crop of 1849-'50 reached nearly 250,000 hhds., of the value, with molasses, &c., of about \$15,000,000. Within a year or two, *one hundred new sugar estates will be opened*. What other community can show as favorable results? Our product is already one-sixth the product of the world, and one-half the product of Cuba; and while we have been at work in developing it, Great Britain has seen her rich sugar colonies dwindle into insignificance, and must look abroad even for the supply of her own

crop of the United States constituted 68 per cent. of the whole! In the second, 74; in the third, 77; in the fourth, 80; and in the fifth, 84 per cent. of the whole. As our bales have increased very much in weight, and are now much larger than those of other countries, our advance has been still greater, and our rank still higher than these figures indicate. —Prof. McKay.

wants.* The investment in mere *machinery*, &c., with us, is of the most costly kind—not less, perhaps, than \$15,000,000; and experiments on the most liberal and largest scale are continually prosecuted. Five years ago, two of our most intelligent citizens went to the Spanish West Indies to examine into the state of the sugar industry, and returned with the gratifying intelligence that they could find nothing there to learn, but that in every respect the Louisianian was in advance. These things we have effected, though—

“The slaves by which Cuba canes are cultivated, are, in spite of the suppression of the slave trade, imported from Africa, at a cost which, on an average, does not exceed, the price in Louisiana of a good pair of mules. The climate there permits these slaves to be worked with as few clothes as they were in the habit of wearing in their native country; whilst our slaves are, generally at least, as well fed and clothed as laborers are in Europe. Canes in Cuba ripen during fourteen or eighteen months, and require no plowing, no ditching, and hardly any weeding; their rattoons last fifteen or twenty years. With us, after having tilled our soil in a manner no farmer in the United States would be ashamed of, we must get sugar out of our canes, on an average, eight months after they have come out of the ground, and must re-plant every second year. They grind six months in the year; we can hardly calculate on half that time. With all these disadvantages against us, our planters make fully as many pounds of sugar to the working hand as can be made in Cuba.”

But I have other testimony. In 1849, the government sent a special agent, Mr. Fleischman, to examine the sugar industry of Louisiana. This gentleman, on his return, made an elaborate and valuable report, in which he says:

“There is no exaggeration in saying, that there is no sugar-growing country, where all the modern improvements have been more fairly tested and adopted, than in Louisiana, and where such perfect boiling apparatus is used, fulfilling all the conditions that science and experience have pointed out as necessary for obtaining a pure and perfect crystalline sugar, combined with the utmost economy of fuel.

“The success of these improved modes is due to the enterprise and high intelligence of the Louisiana planters, who spare no expense to carry this important branch of agriculture and manufacture to its highest perfection. They have succeeded in making, *strictly from the cane-juice*, sugar of absolute chemical purity, combining perfection of crystal and color. ‘This is, indeed, a proud triumph,’ says Professor McCulloch, in his valuable report to Congress. ‘In the whole range of the chemical arts, I am not aware of another instance where so perfect a result is in like manner immediately attained.’

“What was supposed impossible has been accomplished by the Louisiana planter, notwithstanding the obstacles of the late maturity of the cane, early frosts, and other incidents occurring there, which casualties are unknown to the sugar planter of the tropical regions. But not only in the raising of cane and the manufacture of sugar does the

Louisiana planter excel: he deserves also commendation for the manner in which he has embellished his country. His leisure hours are devoted to the beautifying of his estates, thus rendering the margin of the Mississippi a continuation of beautiful villages, surrounded by tropical plants and trees.”

The same gentleman is transported into ecstasies on descending the lower Mississippi, and viewing the cane-fields of our thriving state:

“I cannot describe the delight I felt when I first entered the state of Louisiana. Its river, the creator of this rich alluvial territory, after having tossed and rolled its mighty waters against the wild shores of the upper country, carrying away and building up, inundating vast tracts, and leaving everywhere traces of its destructive sway, begins at once to slacken its current and keep its turbid stream within the bounds of fertile banks, gliding majestically through highly cultivated plains, covered with the graceful sugar-cane, the uniformity of which is continually diversified by beautiful dwellings, gardens, and the towering chimneys of the sugar-houses, the handsome fronts of which stand forth in the picturesque background of the forest, forming an ever-changing scene.

“The traveler who floats in one of the gigantic palaces of the southwest, can from the high deck behold with delight the enchanting scenery the whole day long, and look with regret on the setting sun, which, gradually withdrawing behind the dark outline of the cypress forest, leaves this lovely country reposing under the dark mantle of night. Not less beautiful and well cultivated are the shores of the great bayous and tributaries crossing the state in all directions. I invariably met with that far-famed hospitable welcome peculiarly characteristic of the Southern gentleman and planter.”

But this is not all. We have Texas, which already produces as much as Louisiana did in 1822, and which, in many parts, is abundantly adapted to the culture; and Florida, which, in time, will enter the competition for a large share of the results.

I will not pause to consider our *tobacco* and our *rice*, though they cannot be considered contemptible, since the value we annually export in these articles, alone, is *one-third* the value of the exports of all the North, in every product whatever: nor shall I refer to less important staples.

Let us turn now to the subject of MANUFACTURES. Let the North not suppose she has the monopoly here to herself. A great revolution is in progress. Already the staples of *Southern* manufacture are exhibited at your fairs, which elicit, as your own Reports show, the highest approval and admiration. The product of Southern looms compete in your own markets in the heavier cotton fabrics. The South knows her advantage, and is pushing it with a vigor and energy which nothing can now arrest. She is building up an Institute at Charleston, which will in time vie with your own, and at its great FAIR, last November, made an exhibition which excited universal surprise and admiration. These fairs will multiply in her limits. Already the amount of cotton which she annually consumes in manufactures is between 80 and 90,000 bales, or about as

* SUGAR CROPS IN JAMAICA.

1804.....	112,163 hhds.	1844.....	34,444 hhds.
1805.....	150,352 “	1845.....	47,926 “
1806.....	146,601 “	1846.....	36,223 “
1807.....	135,203 “	1847.....	48,554 “
1808.....	132,333 “	1848.....	42,212 “

Jamaica in 1850, by JOHN BIGELOW.

much as the consumption of the whole North in 1830! Every day our capitalists are investing in new mills, and the planters themselves are urged into the business on the assurance that they can add at the lowest forty dollars to every bale of cotton they produce. In the states of North and South Carolina, Georgia, Alabama and Tennessee, 130 mills are at work, with 140,000 spindles. These mills have a bounty of from $1\frac{1}{2}$ to 2 cents, on every pound of cotton used, in the saving of transportation and other expenses, and it is exhibited in their profits, which are not behind those of the most favored in the world. All of this we have done in scarcely more than ten years; and no one can consider the subject without arriving at the conclusion, that the South is becoming, and will become, perhaps jointly with the West, the great cotton manufacturing region of the world. Were she to work up her 2,500,000 bales of cotton, and receive the profit at \$40 each, she would realize from 70 to 100,000 millions; or if the 600,000 bales manufactured in the United States were manufactured in her limits, she would have 25 millions of dollars to add to her present enormous annual products! Hear what Mr. James, a northern man, says upon this subject:

"In the cotton-growing states, fuel for the generation of steam-power is abundant, and its cost is scarcely more than one-tenth part of its cost in New-England. Why, then, should not the South, even if utterly destitute of water-power, manufacture at least a considerable portion of the cotton grown in her own fields? The bare saving in transportation, commission and fuel, when compared with the amount they cost the manufacturer in New-England, would twice cover the cost of steam-power at the South, including engine, repairs, the pay of engineer, and, in fact, all incidental expenses. I repeat the inquiry then—Why should not the South become the manufacturer of her own product? She would thus retain to herself at least a considerable portion of the many advantages now derived from it by others. For one, the writer can assign no other reason why this is not done, than inattention to, and neglect of the most certain and infallible means to promote the best interests of the community."

And how is it with INTERNAL IMPROVEMENTS? It is admitted, from the denser population, the larger commerce, and the less navigation privileges of the North, she has gone very far ahead in the extension of internal improvements. But here again the South has no cause to blush. In all communities strictly agricultural, where the people travel little, and where the freight to be transported is necessarily bulky, the greatest discouragements are opposed to the construction of railroads; yet has the South not been entirely inactive. As early as 1828, when there was not, according to the Railroad Journal, "a locomotive in successful operation in America, Stephen Elliott, of South Carolina, spoke to his fellow-citizens in the following remarkable and prophetic manner:

"Thus, then, the products of the western country whether descending the White River or the mighty stream of the Missouri; whether floating along the current of the Mississippi or its tributary branches, many of them noble rivers, and, like the Illinois, flowing through territories of exuberant and inexhaustible fertility; whether descending along the stream of the Ohio itself, or any of its secondary waters, will only have to pause in their descending progress, turn against the current of the Tennessee for two or three days, and then in forty or sixty hours, according to the rate at which carriages shall be made to travel, may be placed in Augusta, on navigable water flowing into the Atlantic, or in another day on continued railroads, may be delivered in Charleston or Savannah, in Atlantic ports possessing every advantage that mercantile enterprise may require. Six days, therefore, of uninterrupted travel, may take produce from the confluence of the Ohio and the Mississippi to the shores of the Atlantic, and in twelve days a return cargo may be delivered at the same points!"

Accordingly the Charleston and Hamburg railroad was built, which was at the time *the longest rail-road in the world!* Scarcely had it been completed, when the citizens of that great emporium were found still urging onwards their great enterprise of reaching the Ohio or the Mississippi, and they projected the Louisville and Cincinnati railroad, over five hundred miles in length, and which had the appearance of the most stupendous project known to human industry! The road failed from the extraordinary revulsions of the times; but as it is now in process of attainment by the addition of successive links to the chain, the great credit of the enterprise must be given to the South, and to the practical minds who were engaged upon it. At a time when New-York was communicating with the West through two rivers, two canals, and the lakes; and Philadelphia through the same number of canals, two rail-roads, and eight hundred miles of river, the Charlestonians were at work in substituting, in the language of General Hayne,

"A direct communication between the western states and the Atlantic by the shortest route, a route by which goods will be conveyed in three or four days from Charleston to Cincinnati—a route 340 miles nearer than that by New-York, 240 nearer than that by Philadelphia, and 40 miles nearer than that by Baltimore, even should the Baltimore and Ohio Railroad be carried to Pittsburg."

Let us take these southern states in their order. We have Maryland with her Chesapeake and Ohio Canal and her Chesapeake and Ohio Rail-road, drawing off the produce of the West to Baltimore. We have Virginia, with her Virginia and Tennessee Railroad, intended, when finished, to connect Memphis with Richmond; as also several other roads directed towards the West, to say nothing of the great James River and Kanawha Canal, which, in the language of Governor Floyd, will soon float to Richmond the flatboat which has been loaded at the Falls of St. Anthony. In North Carolina, we have the Wilmington and Weldon Railroad, 186 miles in length; the Gaston and

Raleigh Rail-road, &c., and at the last session of the Legislature was chartered a road from Charlotte to Goldsboro', 210 miles in length, spanning the finest and most improved parts of the state. *South Carolina*, with her great road to Hamburg, and its Columbia and Camden branches, reaching in length, altogether, over two hundred miles; and her road in construction to Greenville and to Charlotte, N. C., which will add as much more in length, demands an honorable mention, and she will find herself, in two or three years, in immediate rail-road communication with the Mississippi River at Memphis, and with the Columbia at Nashville, and will give an impetus to Charleston which will make it soon a formidable competitor with the North. *Georgia*, though she may not like the compliment, has made such progress as to be called the "Massachusetts of the South." She has the Macon and Western Road, of 100 miles, at the cost of \$1,500,000; the Georgia Road, from Augusta to Atlanta, 171 miles, and cost \$3,500,000; Central Road, 191 miles, and cost \$3,000,000; Memphis Branch Road, cost \$130,000; the Western and Atlantic Road to the Tennessee River, 140 miles, and cost about \$4,000,000. Thus have six hundred and sixty miles of rail-roads been constructed and equipped within the last fifteen years, at a cost of about \$12,000,000, two-thirds of which has been furnished by individual enterprise and capital, and the rest by the state. *Alabama* is next upon the map. Though she has but one successful road in operation, viz., from Montgomery, she is yet pressing it forward to the Georgia line with commendable zeal. Her citizens are determined not to be outdone in this competition, and they have already, by their contributions, placed their great rail-road from Mobile to the Ohio River beyond the possibility of failure; being nearly 500 miles in length, and requiring \$6,000,000 or \$8,000,000. The grant of public lands lately made by Congress to this road, places it upon a secure basis. There are also other roads projected and chartered in Alabama, of which we may mention one to connect Montgomery with Pensacola; another from Selma to the Tennessee River; a third to connect with the Mississippi Road to Vicksburg; a fourth from Mobile to Girard, thus reducing greatly the travel to New-York. When we come to *Louisiana*, we find a somewhat different state of things from the rest of the South. So small a part of her population is native and kindred, and devoted to the advancement of this state, it cannot be wondered she is far behind. Latterly, however, a better prospect dawns. Her great city, *New-Orleans*, finds that in the ceaseless race for power and position, she will be distanced by northern competition, unless efforts equally herculean are put forth. She will make

these efforts, and the best guarantees for it are, that a company is now organized there for the construction of a rail-road across the Isthmus of Tehuantepec, and active interest is taken in a road to Jackson, Miss., and other similar enterprises.

It was my intention, fellow-citizens, to have carried out this subject with many interesting details and statistics; but I have been interrupted in the midst of it by a severe attack of indisposition, lasting throughout most of the short time given to me by the society for preparation.

Was I wrong then in saying, that no son of the South need hold down his head when her name is mentioned? Here are six or seven millions of people, occupying fifteen states, including Kentucky and Missouri, who, in addition to the supply of their main wants, are furnishing annually upwards of \$100,000,000 in exportable products to the nation, and who, it is but fair to say, in the last half century, have produced of such exportable products \$3,000,000,000.

How has this money been expended? Ask your artisans, and manufacturers, and merchants, your rail-roads and hotels, your ship-owners and builders, and sailors, do not all of these know what customers the South have been to them? Of those innumerable products of your industry which I see scattered with such a liberal hand around me here, how many are destined for southern markets? And would not the closing of these markets be a greater calamity to you than a war with all of Europe combined?

I suppose, in the season just closed, which has seen your hotels all crowded to their doors, that at least 50,000 southerners, or those supported at the South, have been traveling at the North, for pleasure, for health, &c. Supposing each one of these to have expended but \$300, there is an aggregate of \$15,000,000, which your people have derived from our traveling propensities, in a single year! What is the gross amount of your various products consumed by us, is almost impossible to be given. The figures would astound you if they were.

The south has ever been fondly attached to the Union, and the land which claims the author of the Declaration of American Independence, and the Father of the Republic, both as her own, has never been wanting in chivalrous devotion to that Union. Taking the statistics of the Revolutionary war, and supposing the average period of enlistment was about the same for all the years at the North and at the South, it will be found that in the first five years, or from 1775 to 1780, when the war was chiefly at the North, the southern states supplied each year about one-third the whole number of enlistments. As soon, however, as the war extended southward and became general, the southern states rapidly ad-

vanced, supplying one-half, and for 1780, '81, '82, '83, more than one-half of all the enlistments of soldiers! In the late war with Mexico, whilst the North supplied but 22,136, the South supplied 43,214, or twice as many effective men.

I will not pause to enumerate the statesmen and philosophers, the generals and scholars, who have come from this quarter, and whose fame belongs to the nation. The heritage of their glory and renown should be prized forever.

It is sometimes said, that the South is deficient in military strength. Can that people be very weak at home, who have contributed, as I have shown, so much to the wars of their country, and who gave the commanders-in-chief in all the wars we have had—the Revolution, the war of 1815, the late war with Mexico—Washington, Jackson, Taylor, Scott.

These are the people, fellow-citizens, whom the course of your politicians, demagogues, ill-advised citizens, and even many of the better classes among you, have for the last ten years been estranging from their fellowship with you, and embittering by provocations and taunts, which could not be endured patiently by the tamest and most servile wretches upon earth, much less by a brave, impetuous, and chivalrously honorable people—sensitive to the slightest wrong, generously reciprocating kindnesses—cognizant of their rights and their duties, and brave enough to defend the one, and just enough to observe the other, in all their relations with their fellow men.

I am aware this is a delicate subject, and you must not suppose I shall be so far wanting in propriety as to carry it out at any length upon this occasion. In the connection, however, it was but a solemn duty to refer to it.

The total value invested in slave property at the South, cannot be much short of \$200,000,000; and if we suppose the value of plantations and all improvements dependent thereon to be as much more, we have \$400,000,000, a sum one-third as great as the whole foreign trade of the nation with all countries, in exports and imports, and re-exports, from the Revolution to the present time, added together in one great column!

Let the North then abate the spirit which is doing so much to endanger the Union, and which has induced the southern states calmly to contemplate its dissolution as a thing which their stern necessities may very soon imperiously dictate to them. Several of these states have already convened in primary assembly, to deliberate upon this gloomy alternative.

As a man solemnly responsible to God for his actions and his words, I say, with my hand upon my heart, if the agitation of this slave question be longer continued in Congress, all the power on earth, not the bayonet, nor the cannon, nor fleets, and navies, and armies, can keep the Union together. The highest

and holiest of all laws forbids it—that of self-defence and self-protection. No other law can be recognized by us; and a separate confederation will be formed, for which there are at the South all the resources of wealth, and power, and opulence!

God grant there may never be such a dire alternative. Gentlemen, let us cultivate a better spirit for each other, intermixing and associating upon terms of friendliness, and reciprocating, in the exchanges of our industry and our enterprise;—mindful of the glorious old times of the republic, when our fathers at Bunker-Hill, York Town, or New-Orleans, or in all of the perilous periods of our history, stood shoulder to shoulder, and breast to breast. With such a concord of heart and purpose, what a nation have we made of this, and what madmen are you to urge its inevitable destruction!

Already does our empire extend over a domain wider than that of the Cæsars in their proudest days of conquest. From the island of Fuca, in the Gulf of Mexico, to the Straits of Fuca, on the northern Pacific; from the Aristook valley to the Bay of San Diego, the Union extends its leviathan proportions. The inhabitants of these extreme points—more distant apart than the old and the new world on the usual routes of travel—are brothers and fellow-citizens, under common laws and with a common destiny. It is as though the Shetland Islands and the Bosphorus, Siberia and the gates of Hercules, were made the outposts of an empire which embraced the whole of Europe. For such an empire, Alexander and Cæsar sighed in vain, and Napoleon deluged the world in blood!

SOUTHERN INDUSTRIAL REVOLUTION.*—The committee who were entrusted with the duty of inviting the assembling of this Convention, has instructed me, one of its members, to recapitulate a few of the advantages which were proposed from its action; and also to suggest some practicable means, if such exist, of making that action felt widely, generally, and beneficially, throughout our limits, in the future.

The meeting of a body like this, constituted from so many sources, and embracing so much of the talent of so many great states, at a point like New-Orleans, which has been considered hitherto as dead to every other consideration than that of levying tribute upon nature, in sleepy apathy, is an event of no ordinary moment in the history of the southwest. It evidences a revolution in progress among us, which even two years ago could not have been predicted without hazarding the character of sanity, and throws, amid all the discouragements by which we are surrounded, a broad gleam of sunshine upon our future hopes and prospects.

* Speech by the Editor in New-Orleans, and at Jackson (Miss.) Railroad Convention, Jan., 1852.

Yet, gentlemen, let us not argue too strongly, from what, after all, may be but the most deceptive appearances. Our disappointments have been so many and so bitter in the past, and we have had the chalice broken so often at our lips, that it is impossible, even with all the sanguine characteristics of our nature, not to be agitated with doubts and fears. Our addresses, our reports, our discussions, may be destined to be as evanescent as the breath which utters them, or as valueless as the paper upon which they are inscribed; and the heritage of our fathers be ours still, in all the future, to "resolve and re-resolve," yet "die the same."

I am wrong, perhaps, to doubt for the West—the giant West, which has sprung from swaddling clothes into colossal habiliments; which has promised nothing, yet fulfilled everything—but yesterday a wilderness, to-day, nourishing and supporting as many thronging, active, enterprising millions, nearly, as did Great Britain, when she resisted, during the Napoleon wars, the shock of all the armies in Europe. But what shall we say of the South—the old South, which fought the battles of the Revolution—which gave the statesmen, the generals, and the wealth of those early times—which concentrated then the agriculture, the commerce, and, even to some extent, the manufactures of the continent, but which has lost, or is losing everything else, save that agriculture; and even this last resource growing less and less remunerative, threatens in the event to complete her beggary? How much has the South promised, and how little has she fulfilled? Her manufactures originated coeval with those of the North, and when there were not fifteen cotton factories in the whole Union, she had constructed an immense one in her limits. Nearly half a century has passed since then, and yet the South, though growing nearly all of the cotton required for the world's consumption, leaves 29-30ths of the profitable business of its conversion into fabrics to other and to foreign hands!

And how has it been with our commerce? When New-England struggled with the whale in northern seas, the rich argosies of the South, laden with abundant products, were seeking the markets of all Europe. Seventy years before the Revolution, Maryland, Virginia, and Carolina, as the chronicles tell us, furnished the entire exports of the colonies, and imported more largely than New-England or New-York. Fifty years before the Revolution things had but slightly changed, and the exports of New-York, New-England, and Pennsylvania together, were less in amount than those of the single colony of Carolina. Even in 1775, the exports of New-York were £187,000; Carolina, £579,000; Virginia, £758,000. Imports of New-York, £1,200; Virginia and Maryland, £2,000; Carolina, £6,000. Georgia, a new plantation, equaled New-York! As late as the close of the cen-

tury, Charleston continued to contest the palm with New-York. But how has that struggle ended? Who dares grapple with that colossal city, without the certainty of being ground into powder? What has become of southern commercial competition, now that New-York and New-England conduct nine-tenths of the imports of the country and one half of its exports, though nearly all of these exports, with which, of course, the imports are purchased, are of southern material, and more than an equal proportion of the imports are for southern consumption? * Thus it is calculated that the South leads from year to year a trading capital to the North amounting to nearly one hundred millions of dollars, and upon which the North receives the entire profits! Can it be wondered at, then, that the North grows rich, and powerful, and great, whilst we, at best, are stationary?

The first steamship that ever crossed the broad Atlantic sailed from the southern port of Savannah; and in 1839, when the practicability of this description of navigation was fully demonstrated, Virginia was talking of negotiations with the French, in order that Norfolk might be made the terminus of a line contemplated from Havre—yet, at this day, throughout the length and breadth of the South, what steamer seeks a European port—though the North rapidly approximates to a daily line?

The South had within her limits once the longest rail-road in the world, and projected, and actually commenced constructing the first great rail-road across the mountains to the teeming West; and how has she pursued this movement? Whilst the North has opened innumerable communications with the valley, and is draining it of the most valuable products, in return inundating it with the products of her workshops and her commerce, enriching herself beyond the dreams of her own enthusiasts, what single communication has the South to that valley, except what nature has given her—the great river and its tributaries—a communication which must soon be superseded by the works of art. After twenty years' experience, notwithstanding our early promise, and with equal population with the North, we have but one-third the actual miles of rail-road constructed, though our territory is five times as great. In other words, the North has twelve times, or including Texas, eighteen times the extent of rail-roads to the square mile that the South has; and each mile of northern territory has expended thirty times as much upon such roads as each mile of southern territory.†

These are stubborn facts, gentlemen, whatever reason may be assigned for them; and though one or two of the southern states may

* The calculation is, of course, intended as an average one.

† See address to the people of the South and West, in De Bow's Review for August, 1851.

constitute, in some sort, an exception, as for instance, Georgia, which has lately made rapid strides beyond her neighbors, no one can object to us that we have not stated the proposition with general fairness and truth.

We have been content to be solely agriculturists, and to exhaust the fertility of an abundant soil, believing that all other pursuits being derivative only, were of less importance, and even dignity. The fashion of the South has been to consider the production of cotton, and sugar, and rice, the only rational pursuits of gentlemen, except the professions, and like the haughty Greek and Roman, to class the trading and the manufacturing spirit as essentially servile. I admit the day is passing away, but it is passing too late to save us, unless we display a degree of vigor and energy far beyond what past experience would bid us hope. The planters of the South perceive the position of peril in which they are placed. They have a slave force which has increased in numbers 711,085 in ten years, and which must be shut up forever within its present limits, though the productions of these slaves have not increased in value in proportion, or in anything like it.

Is this not a significant fact, and does it not encourage dark forebodings of the future? Yet the result is but natural, and clearly deducible from the rules of legitimate political economy. Mere production from the soil soon finds its limit and limits population. Gentlemen of the West, you too already begin to feel this truth; for have you procured a market for your breadstuffs and provisions at all comparable with your capacity to supply them? Twenty years ago your exports were one-half of what they are at present, though your population has increased four-fold since then; and when, in 1846, under the pressure of foreign famine, you exported three times your exports of the present year—you demonstrated the inexhaustible character of your granaries, and that want of demand which begins already to press so severely upon you.

The planters of the South have lately met in convention, at Macon, Ga., and propose another convention in May next, in Montgomery. Some of their delegates were sent to this convention. But what is it they propose? It is not to create a demand for their labor in its present exercise, or to create new results for that labor, but letting things remain as they are, to affix a certain arbitrary standard of price, and by a combination among themselves, preserve that standard, in defiance of all extraneous influences. It is barely possible that something may come off this scheme that shall tell upon their future prosperity. It is possible that there are other plans which may be adopted, more promising of success, or at least that something is practicable to relieve the planters, as things now stand; yet we must be allowed to entertain some doubt in the matter.

Gentlemen of the South and the West, the true mischief under which we labor stands upon the surface, and requires no probing to discover. Four times the number of grain growers find but a two-fold increased market for their products, and 750,000 additional slaves are becoming consumers in a larger degree than producers. Here is labor expended without profit—lost to all the purposes of improvement, and of advanced prosperity and wealth. Where, then, shall we look for a practical remedy? We must diversify, or find new employment for labor. And how is this to be done? I answer,

I. *In the construction of a system of rail-roads through our limits.*—It is a merit of rail-roads that they have the highest influence in diversifying the industry of a people. They open a country and extend population, thus creating the very trade that supports them. They raise the price of lands by bringing them into more immediate connection with market, and thus pay back the investment, without reference to their actual earnings, which, in addition, are usually as large as those of other descriptions of investment. They build up cities, as all experience shows, and, by giving certainty, speed and economy to communication, make manufactories practicable where otherwise we in vain would look for them. The example of Georgia is in point, where a thousand villages are springing up and manufactories extending, thus acquiring for her the reputation of the Massachusetts of the South. Every rail-road in New-England develops in its course manufacturing villages, and few of these villages may be found there without such communication with the capital. The South has been content with the cumbrous machinery of her wagons, and with the frequently interrupted and dangerous navigation of her rivers; and this has been the case with the West. Thus nine-tenths of our country has been literally shut out from market for more than half the year, and, during the remainder, pays the penalties of delays and losses, which are never incident to rail-roads, and which counterbalance the advantages of cheaper freights, though, as to actual cheapness, it may be affirmed that rail-road communication among us could be made as cheap, all things considered, as that conducted at present on the rivers. We know that the immense steamboat interest of the West is now actually paying no dividend, being a most hazardous business, and that it is so much capital almost unproductively employed, and thus lost to the country. Yet, what are our rivers and our steamboats? Floating *Ætnas*, which belch forth their bolts of death in the moments of our greatest fancied security and repose. Never could a convention have met at a more propitious moment than this. We have just passed through a season of the most frightful losses of life on our rivers, and have witnessed

a prevalence of low waters calculated to break up the commerce of any people upon earth. Look at the Ohio, the Cumberland, the Red, and the Arkansas rivers. Until the other day, the memory of man scarcely runs back to the time when we would navigate them securely with our larger steamers; and hardly have the showers descended, and their waters swelled again, before several of them are locked up in icy repose. Can a people, relying upon such communications, expect prosperity? Can industry thrive, or must they not remain in a semi-primitive state, and incapable of that combination of effort which alone secures natural prosperity? Place the North in a similar position for twelve months, and her towering manufacturing palaces crumble into ruins, and her ships rot upon their stocks. She found even her great canal to the West, her Mississippi River, would not suffice, but built two great rail-roads, almost the greatest in the world, parallel to it. Our planters frequently lose more by their incapacity to reach market during high prices than would build a rail-road to their doors. It is believed that sufficient was lost last year, in that manner, to have half built the road from New-Orleans, through Mississippi, to the Tennessee line. What embarrassments, too, have our merchants experienced during the same time, from the impossibility of receiving the consignments upon which heavy advances have been made? Is not this disastrous to trade, and have we not felt it so?

No people on earth have the means of building rail-roads so economically, so speedily, and with such certainty of success, as we of the South and West. As compared with the North, what we have already built has cost, on the average, not half so much. Our country is level—we have no right of way to purchase. We have abundance of timber on the spot, and will only pay the expense of working it, and, throughout the South, have an available cheap negro labor, which, if diverted from agriculture into this field, would diminish nothing of the money value of our crops, and thus make the rail-roads a clear gain to the wealth of the country.

Wherever negro labor has been applied, it has been with great success. Of the 700,000 negroes, whose labor has added nothing to the wealth we had ten years ago, could 100,000 be diverted to the construction of rail-roads, the South might open several thousand miles every year, and would have the same means of ironing them that she has now from her other resources. Let no one object that our population is too scattered; this will condense it, and invite immigration, which now takes altogether a northern direction, because here nothing is held out to it. Besides, denseness of population has not been the secret of success to the North. New-England, though no denser than Ohio, has three times the extent of rail-road; and the small

State of Maine, though less dense in proportion to territory than Kentucky or Tennessee, has actually constructed more miles of rail-road than both of these great states together. Even at the South, Georgia, with a million of inhabitants, and the usual density, has twice or three times the extent of rail-road in her limits than all the southwest together; and South Carolina has more than Louisiana, Texas, Mississippi, Alabama, and Arkansas, though her population is not one-fourth so great. It is common to say that the people of the North have greater propensities to travel, and thus more readily support their rail-roads than we would. Now, this is not true, as we know that no people are more sociable and fond of locomotion than the southern people, even with all the difficulties that environ them. And were it true, we know that the disposition to travel in the North did not create the rail-roads, but was created by them, being proved by the fact, that most of their great roads carry from five to ten times the number of passengers which were argued for them on the basis of their previous travel, and several times as much freight.

Another advantage enjoyed by the South and the West is, that there is an immense public domain belonging to the government, and will soon belong to the states, which can be procured for the mere asking, and which will go a great way towards building our rail-roads. The grant to the Mobile road, it is thought, will iron the whole route. Texas and Louisiana, and Mississippi and Alabama, are peculiarly favored in this manner.

There has been a principle adopted in Tennessee, which I hope to see adopted in all the southern states, and which this convention should recommend, viz., that the states endorse the bonds of all companies for the purchase of iron after they have laid the track, etc., and take its mortgage upon the work, to secure it in the event that the companies fail to keep down the interest on their bonds, or to cancel them at maturity. This is a plain duty of the states, and, in addition to the power vested in the counties and parishes to tax themselves, would secure for us, in ten years, results which not even a dreamer could anticipate. A sound division would be for the state to take 1-3 interest, (Virginia takes 3-5,) individuals and corporations of cities 1-3, and let the rest be obtained by taxation. Thus, all interests would be called on to contribute to the construction of our great proposed lines.

Whence this disposition to throw the valley of the Mississippi into the lap of the North, thus rolling, as it were, commerce up stream, and reversing the natural state of things? The rail-roads and the canals point in that direction, and everything is absorbed in the rapacious exactions of New-York and Boston. Is there not a greater reciprocity between

the interests of the South and the West than between those of the West and the North? Is there not a demand here for western produce, and one that will grow as we advance together? Have we not ports and harbors at least equal to the North? Are not the Northwest and the West as much interested in keeping up the speediest and the best outlet to the Gulf of Mexico as they are to the Atlantic seaboard? And are not rail-roads superseding every other means of outlet? We scarcely yet appreciate the importance of the Gulf of Mexico, this great *southern sea*, which should as much be guarded by the South as the British channel is by the English. Look at its fertile and abundant islands, capable of supplying the tropical products of the world, if in hands adequate to their development, and who can doubt that, before the century has passed away, these islands will be overrun, peaceably or even forcibly, by a people who, in fifty years, have planted ten millions of freemen in a wilderness! Great God, can we even conceive what will be the future importance of these islands! But then, look further. The Gulf of Mexico sweeps into the Caribbean Sea, and unlocks for us the whole of South America—a region which, with Anglo-Saxon amalgamation, may, in the progress of history, be as important as the present importance of our own country. In its great bosom blend the waters of the Mississippi and the Amazon rivers, which dwarf all others in the world. There is a wilderness of treasures in this valley of the Amazon. “Of more than thrice the size of the valley of the Mississippi,” says Lieut. Maury, “the valley of the Amazon is entirely inter-tropical. An everlasting summer reigns there. Up to the very base of the Andes the river is navigable for vessels of the largest class. All the climates of India are there. Indeed, we may say, from the mouth to the sources of the Amazon, piled up, one above the other, and spread out, Andean-like, over steppe after steppe in beautiful, unbroken succession, are all the climates and all the soils, with capacities of production that are to be found between the regions of perpetual summer and everlasting snows.” The Gulf of Mexico opens to us the Pacific and the Indies, through whichever of the Isthmean routes that may be selected, though the one by Tehuantepec is clearly best adapted to the wants of the southern and western states. Even should a route across the continent be secured, that route must cross the Mississippi at a southern point, if Texas be true to herself, and thus the importance of converging western roads in this direction.

II. Having constructed a system of rail-roads netting every section of our territory, the South and West will naturally resort to manufactures, which is our second great remedy for the evils which the present shows and the future foreshadows. Hamilton Smith,

of Kentucky, has demonstrated, that where the coal and the iron, and the provisions are, there will be the seat of manufacturing empire; and by a calculation as close as it is perfect, has demonstrated for the Ohio Valley the prospective Manchesters and Lowells of the Union. We think this the truth, but not the whole truth. The South has only to make a systematic and combined movement to break down northern supremacy in this particular. What practical difficulty is there in the way of her supplying the whole demand of America, at least, for coarse cottons and yarns? The material may be used upon the spot where it is grown, thus saving all the expense of shipment and insurance, and interest and commissions, equivalent to two or three cents a pound, or to a protective tariff enjoyed by the South over the North of from 25 to 33 per cent. Our experiments, when fairly tested, have been successful; and it is worthy of remark, that the embarrassments of northern mills during the last year, were not in the same degree felt by those of the South, whilst southern cotton goods already take the palm even in northern markets. Our surplus negro labor has here a wide field open; and every one familiar with the mere mechanical and unintelligent operation of tending the machinery of a cotton-mill, will admit that negro labor, properly organized and directed, can be as effective as the ignorant and miserable operatives of Great Britain. Where it has been tried, and the experiments have been numerous enough, it has proved successful. If twenty planters, working twenty hands each, were to set aside, on the average, five of their hands for purposes of manufacture, there would be one hundred hands, in addition to the younger ones, now almost unproductive. The machinery for these hundred hands, and the rude buildings, would not exceed \$40,000, or \$2,000 each, and thus, without materially diminishing their production of cotton, it could be thrown into a shape which would double its value. Are such combinations among the planters practicable? If they are not, they are at least practicable to our people. But, says one, we have not the capital to spare. I admit we have not at present, because it is diverted into different channels; but if we will withdraw it, we shall find there is quite enough among us. Or even if we had not the capital, it will be easy to invite it from all sections of the Union, and the world, if we can demonstrate, as we can, a higher degree of profit for it here. But we must have laws to favor such organizations, and a sound and liberal system of financial credit and banking. How much of the mighty capital of the North is foreign, accumulated by debt, or invited by the hope of profit? The South can have as much, if she will but make the effort.

But, gentlemen, we should soon have capital enough, and to spare, if we could add to

our present earnings; those that we sit patiently by and see England and the North realize by the conversion of our products into fabrics, and even those for our own use. There would be added \$40,000 to \$80,000 annually to the capital of the South, which would soon give us a degree of power and wealth enjoyed by no other people.

III. The next point, gentlemen, to which the attention of the South should be called in the diversification of its industry, is the *extension of its foreign commerce*. Can any one assign a sufficient reason for the fact, that the whole business of exchanging the products of the South for those which are required from other countries for our consumption, is left to other hands? Northern writers assure us that they make from forty to fifty millions annually out of this business which we complacently leave to them. You may say that the North is more maritime; this is true, but not necessarily, as we infer from the fact that the southern foreign commerce in the early periods of our history was relatively much larger than now; and in the nations of the old world, the most maritime and commercial were always those of the South. It is only lately that the trident of the seas is swayed by northern hands—a sufficient proof that, in the nature of things, there is no necessity for it. It has been the result of artificial causes.

* * * * *

A committee of the Boston Council, in accounting for the extraordinary progress of that city, fix it in the extensive construction of rail-roads, and the establishment of semi-monthly steamers to Europe. The business of these steamers, it was at first thought, would be simply the mail and passengers. Yet the freights, instead of paying government duties, as they did at first, of \$29, have reached as high as \$217,000 on a single trip. Before the establishment of these steamers, Lieut. Maury tells us, there was not in a whole year a single vessel clearing from Boston for Liverpool, so completely had New-York monopolized the business. New-York led the way in the establishment of European packets, though it was universally argued that they would not succeed. At first, three small vessels, of 300 tons each, were put on. They sailed on regular days, freight or no freight. They took at the lowest rates rather than go in ballast. Public interest attached to them, and they increased in numbers—vessel after vessel, and line after line being added, until these regular vessels were up at last for every port in the world. Boston, nearly undone by the enterprise of New-York, turned into a new channel, and fostered a line of foreign *steamships*. Upon this the Gothamites were not content to look long in idleness. They got the government committed in their aid, and then launched out into the business of steamships—performing, in

the brief period of two or three years, the most wonderful results. To England, to France, to South America, the Pacific, the West Indies, the Gulf—to southern ports, everywhere, these steam lines are in active and daily operation.

Thus, gentlemen, you see how the extensive commerce of the North has been built up. You may build rail-roads, erect factories, hold conventions, but you cannot redeem the commercial apathy of the South unless you are content to adopt the same expedients. Where have we, throughout the length and breadth of the South, packet-ships sailing for Europe, on a regular day, freight or no freight? We have none. The result is that business, which cannot wait for time or tide, goes naturally where there are such ships. What single steamship have we from a southern port for Europe? Thus, our correspondence and our passengers, and our valuable return freights, must take the circuitous passage to the North. One of our southern cities has determined to remove this stigma, and has, we believe, with state aid, actually taken the stock for two steamers for Europe. Will the South favor this movement, or will these steamers, after a brief career, be bought up by the North, and placed on the California line? They will assuredly be, if southern men continue to find nothing good in Nazareth, and go seeking after the flesh-pots of a northern Egypt. In New-Orleans, a year ago, several enterprising gentlemen discussed the subject of a line of foreign steamers from this port. They got up a circular; they proposed a company of four hundred and fifty persons, subscribing \$1,000 each, and two steamers of 1,500 or 1,600 tons burthen, capable of carrying two hundred passengers, and three thousand two hundred bales of cotton. The British Consul, Mr. Mure, a practical merchant, demonstrated that these ships would pay 42 per cent. per annum. Yet, who has come forward to take a single share? And has not the whole projection already taken its place with the thousand others which have dragged the South down to her present level?

Gentlemen, will these things continue? You are aware that the people of Virginia have lately held a commercial convention, and determined, so far as they are concerned, they shall not continue. They even appointed delegates to this convention. More lately, the planters of the South convened at Macon, Ga. The continent of Europe consumes 600,000 bales of southern cotton, the most of which is obtained through Liverpool, thus exacting a tribute both from the producer and consumer. "Any measure," says Col. Gadsden, "which would tend to the distribution, by direct intercourse with many markets, of what they may consume of cottons, in exchange for the commodities they are prepared to offer in return, would, to some extent, re-

medy the revulsions which concentration at a single point produce, and, as supply and demand are made to harmonize, would in time lead to a more healthy and regular trade, and more steady and remunerating prices."

Thirteen years ago the South was greatly aroused on this subject of her foreign trade, and several large conventions, embracing the talent and enterprise of half a dozen states, were held in Macon, in Augusta, in Charleston; but from this spasmodic effort we declined again into that torpor which has been exhausting our life-blood. Some of the most gifted and practical sons of the South reported in its committees, and demonstrated as perfectly as could be done, the evil and the remedy.*

Never were more able and convincing papers put to the world—but we have not heard them. I trust that this convention will republish them among its documents.

Thus, gentlemen, we have a true picture of our past history, and our present position. The agriculturists, the merchants, the manufacturers, the internal improvement advocates, are represented here. We are here with credentials from executive offices, from municipalities, and public meetings, and represent ten or eleven states. It is difficult to get such a convention together. The work before us is great and pressing, and shall we be content to adjourn before it is performed?

Gentlemen, a great reform, like that which is necessary in our position, is not to be achieved in a day. It requires organization, agitation, the dissemination of information, the frequent meeting of practical men, memorials and addresses. The day of deliberation is at last followed by the day of action. It is thus that conventions have their great value. They bring about an association of effort, arouse dormant energies, stimulate emulation. They are a blessed invention of our popular institutions, and are not less in importance than the meeting of our constituted authorities.

It is the misfortune with us, that when we have been aroused in the past, it has been by paroxysms, and never followed by sustained efforts. We have come together in convention, but when the convention adjourned, there was the end of it. Nobody had power to act in the recess. The thing soon passed out of mind. Thus was it with the Commercial Convention of Augusta, of Macon, and Charleston—the rail-road meetings of Memphis and St. Louis; and thus will it be with those the other day of Richmond and Macon; and thus will it be with ours, unless we take some measures to prevent it; and what are these measures?

Let us preserve and perpetuate this organization. Let the members now present, who have been selected as judiciously as any that ever met in the country, resolve that they will continue these meetings, and carry on these discussions, until *all* the great fruits we desire are reaped. It may take years—be it so—but let us not adjourn absolutely now. Let this convention resolve itself into an association for the promotion of the great industrial interests of the southern and western states. Let us provide for its future *annual* meetings, say at Nashville, at Jackson, at St. Louis, at Mobile, at Charleston, etc. Let the next meeting be at Nashville, in January, 1853. Let us appoint committees now, in each of the states, to report at that meeting upon all the great questions. Let the Nashville committee be charged with the duties of getting up the next convention, and sending out the address. Thus this convention will become in time the great centre of the industrial interests of this region. It will collect through its committees and correspondence extensive information, which will be distributed gratuitously at the annual meetings. No one can estimate the good that will be effected. It will be the focus to which leading practical minds will be drawn. It will be in session always by its committees. It will be felt each moment, and throughout all our limits. No more powerful agency could be devised. The men of science have found it so, with their society meeting, by turns, in all of the great cities of the Union. So with the physicians, whose convention adjourns over annually, from one part of the Union to another. Why should not a like plan be adopted by the practical and industrial interests which involve everything of our future hopes and prospects?

Gentlemen, resolutions will be offered in the convention, corresponding with these views. I trust that they will be adopted, and that the members here assembled will pledge themselves to each other to continue to meet at the stated annual points; that they will prepare for these meetings by the collection of information, and if placed upon committees, that they will cordially and earnestly perform the duties entrusted them; that they will operate upon their communities in keeping up fresh appointments of delegates, direct from the people, from year to year. The matter involves a little pains and a little expense, but who would decline as much in promoting such great results; and what citizen can be true to his country who would hesitate to serve her thus? The beneficent effects will accrue to us, and to those who may succeed us on the stage, in all the future. For this consummation let us devoutly pray.

* For proceedings of these Conventions, see De Bow's Review, vol. iii. iv. v. vi.

SOUTH—VALUE OF LIFE IN THE.—The protection afforded by marine and fire insurance companies is now so well established that no prudent man can be found to risk a ship at sea, or a house in town, without a policy. We have in the United States not only become familiar with the doctrine of probabilities, on which such companies are organized, but our experience has been sufficiently long and large to establish fully their safety and utility. *Life insurance*, on the contrary, with us is still in its infancy, and its importance not yet fully realized. Marine and fire insurance have done much towards giving a firm and steady march to commerce and all those transactions which bring prosperity to individuals and nations, and life insurance is but another strong link in the great chain.

There is no certainty in human events. The calculations of the merchant—the harvest of the planter—the fate of a ship at sea—the very existence of the world for another day, are all but probabilities, and we should not forget that nothing is more uncertain than human existence. “In life we are in the midst of death,” and a day or an hour may paralyze the hand which feeds the helpless.

In a country like ours, where with untrammelled energies and eager grasp, we are pressing along the road which leads to fortune and greatness, we unfortunately sometimes travel too fast, and great commercial convulsions are inevitable consequences, which bring ruin on individuals the most prudent and cautious. Bankruptcy comes, and often under circumstances which leave little hope for the future. Take a person so situated, or one who is living on a small income, with the uncertainty of life hanging over him, and how much more cheerfully would he toil on, could he say, come what may, my life is insured, and my wife and children are sure of something to save them from want.

The proportion of those in any community who have capital to invest, or who are able to buy an annuity, is very small, but the proportion is large of those who could lay aside a few hundred dollars annually for life insurance. The small savings of an income might thus be laid out in a good mutual insurance company, where it would not only be safely, but profitably invested.

But while we are thus setting forth the advantages of life insurance, and placing it on the same platform with marine and fire insurance, we must not omit to warn against its dangers and deceptions. The great mass of those in the United States who insure their lives, (and thus become co-partners in the concern,) are utterly ignorant of the business they have embarked in; they know nothing of the history and principles of life

insurance, the probabilities of life, the chances of profit or loss, responsibility often incurred, &c. They are attracted and guided solely by the one-sided representations of interested parties.

A new mutual insurance company springs into existence, got up probably by a few men without capital in the hope of making a good speculation. Pamphlets are printed and circulated, newspaper puffs are put forth in every direction, showing the immense and increasing profits of the second, third, and fourth years, all of which is very plausible and imposing. The statements may be false, or the statements may be true, and the impostors may be as badly deceived as the public, for they are themselves too ignorant to know the dangers of the machine they have put in motion. A company may work admirably for a few years, and eventually wind up disastrously. Several hundred, or several thousand badly selected lives may go on smoothly for several years; but many of these being insured for life, if they do not (and they cannot if badly selected) reach the *average duration of life*, on which life insurance is based, a heavy loss must follow.

Life insurance in Europe, like marine and fire insurance, is based on long experience and ample statistics. Tables of mortality there, have been kept for a long series of years, and the laws are fixed. In our country vital statistics are very imperfect, and our climate, habits, diseases, &c., are so different, that the same rules are wholly inapplicable. Statistics must be accumulated through some threescore and ten years before the laws of mortality here can be fairly made out, and our way clearly seen.

It is to be feared that life insurance companies now, like banks a few years ago, are becoming affairs of speculation, and that some of them will terminate not less unfortunately. There is an over anxiety for patronage, and a carelessness in selecting risks, which is often apparent, and which should cause the prudent to pause and reflect.

The great success of the *Equitable*, and some others of the long-established English companies, is held up as a proof of the advantages of mutual life insurance; but the story is but half told. Mr. Morgan, than whom there is no higher authority, has shown that this great prosperity is attributable to circumstances which cannot occur again. The premiums charged some years ago by the *Equitable*, were nearly double what they now are; and besides this, during the first twenty-five years of the company's existence, half the insurances were abandoned by the insurers, in many cases after they had paid for a considerable number of years. Yet we see trumpeted forth the

success of the Equitable, in order to tempt the unsuspecting.

But let it be steadily borne in mind, that not the chance of large profits, but *security* of the investment, is the first and paramount consideration. When an individual, at the end of the year, pays to an insurance company the small savings of his hard and anxious toil, the question to be asked is not, is there a hope that I am to reap compound interest? but, are my wife and children or my creditors *sure* of the amount I have bargained for.

We have no space here for following out this point as well as many others, and our only hope is, that we may do something towards stimulating investigation, and inducing persons to inquire into the condition and conduct of companies before trusting them too far. In order to give more weight to what I have said, I will here introduce a quotation or two from McCulloch's Commercial Dictionary, an authority which will not be called in question. If what he says of English companies be true, with how much more force will it apply to those of our country?

"Security, in life insurance, is the paramount consideration. It is, we believe, admitted on all hands, that the premiums were at one time too high; but we doubt whether the tendency at present be not to sink them too low. A great relaxation has taken place even in the most respectable offices, as to the selection of lives. And the advertisements daily appearing in the newspapers, and the practices known to be resorted to in different quarters to procure business, ought to make every prudent individual consider well what he is about before he decides upon the office with which he is to insure. Attractive statements, unless they emanate from individuals of unquestionable character and science, ought not to go for much. Life insurance is one of the most deceptive businesses; and offices may for a long time have all the appearance of prosperity, which are, notwithstanding, established on a very insecure foundation. If a man insure a house or a ship with a society or an individual of whose credit he gets doubtful, he will forthwith insure some where else. But life insurance is quite a different affair. The bargain is one that is not to be finally concluded for perhaps fifty years, and any inability on the part of an establishment in extensive business to make good its engagements, would be productive of a degree of misery not easy to be imagined."

Life insurance companies are divided into three classes. First, joint stock, who pay fixed sums upon the death of the individuals insuring with them, the profits going exclusively to the proprietors. Second, mutual insurance companies, in which there is no proprietary body distinct from the insured, who share among themselves the whole of the profits of the concern. Third, mixed companies, combining the two former plans in various degrees.

We will not detain the reader by comments on the comparative merits of these, but will content ourselves with another extract from McCulloch, which contains some excellent hints:

"The advantage to a person insuring in any one office as compared with another, must plainly depend on a comparison between the premiums demanded, the conditions of the policy, and above all, the *security* which it holds out. It may appear on a superficial view, as if the Mutual Insurance Companies would be, in all respects, the most eligible to deal with, inasmuch as they have no proprietors to draw away any share of the profits from the insured. It is doubtful, however, whether this advantage be not more than balanced by disadvantages incident to such establishments. Every one being a partner in the concern, has not only his own life insured, but is part insurer of the lives of all the other members; and may be, in this capacity, should the affairs of the society get into disorder, incur some very serious responsibilities. The management, too, of such societies, is very apt to get into the hands of a junto, and to be conducted without the greater number of those interested knowing anything of the matter. There is also considerable difficulty in constituting such societies, in distinguishing clearly between the rights of old and new members; for supposing a society to be prosperous, it is but reasonable that those who have belonged to it while it has accumulated a large fund, should object to new entrants participating in this advantage. But the affairs of a society conducted in this way, or making distinctions in the rights of its members during a long series of years, could hardly fail of becoming at last exceedingly complicated; nor is it, indeed, at all improbable that the conflicting claims of the parties in some of the societies of this sort now in existence, may ultimately have to be adjusted in the courts of law, or by an Act of the Legislature."

All the life insurance companies of the United States are north of the Potomac, as are nearly all the writers on vital statistics, and we are well satisfied that a want of local information and personal observation have led them into many grave errors respecting our condition at the South. From a half to one per cent. more is demanded on southern than on northern risks, and we propose now to inquire if there be sufficient reason, under all circumstances, for this distinction?

As our subject opens a wide field, which cannot be explored in the limits of a periodical, we shall confine ourselves to a brief inquiry into the health and longevity of our *southern seaports*, Charleston, Mobile, New-Orleans, etc.

We have already said that vital statistics in the United States are yet in their infancy, and we think a capital error has been committed in basing the operations of insurance companies in this country, particularly the southwest, upon the experience of those of Europe. In Belgium, France, and England, for example, and we may add New-England, population is dense, the means of subsistence and comforts of life difficult of attainment, marriages comparatively few, and the population must necessarily present a very different picture from that of our southwestern states. *There*, comparatively few children are born, and the average age of the living population must be higher than *here*. In Europe, the old maids and bachelors serve to swell the average age of the population, while in the southwest, by marrying and propagating, they would reduce it.

Suppose the whole population of Connecticut and Tennessee were struck dead at the same moment, the average age of all the dead in Connecticut might be forty, and that of Tennessee but twenty. But this would not prove that the longevity of the one is greater than the other, yet the *fact* is so construed and gravely set forth by statistical writers at the north.

Whether a population be a young or an old one, it should be remembered that disease and death are every where doing their work, and that the heaviest mortality every where is below the age of five years. So it is evident that the average duration of life, taken alone, proves nothing,—the lowest average may be in the healthiest country.

Our northern friends, though fully satisfied of the greater mortality in all ages below threescore and ten throughout the southwest, both town and country, than in New-England, yet are obliged to admit the greater frequency here of instances of extreme longevity. This fact has much puzzled writers on vital statistics, but we

think a satisfactory explanation may be given. May it not be accounted for by the well-known fact that in very old people, in whom the *vis vitæ* becomes much exhausted, there remains little power to resist extreme cold. The difference between town and country in the south is not great, but at the north the centenarians double those of the country, because the inhabitants of cities are not so much exposed to extreme cold as those of the country; they are protected from the winds by the multitude of houses, and their dwellings are better built for excluding cold.

We will here introduce a table from Que-telet's "Recherches sur la Reproduction et la Mortalité de l'homme aux différens âges, et sur la population de la Belgique," which he gives "in order that we may ascertain at what ages extreme heat or extreme cold is most to be feared. We add also a table from Mr. Shattuck's "Report on the Census of Boston," in which evidence is given of the influence of cold over old people.

	Deaths during the Months of		Deaths in July for 100 Deaths in January		Deaths in Boston over 60
	Jan'y	July			
Still Born.....	269.....	215.....	0.60.....	January.....	1.09 per cent
First month after birth.....	3,321.....	1,719.....	0.52.....	February.....	1.16 "
4 to 6 years.....	878.....	600.....	0.59.....	March.....	1.02 "
8 to 12 ".....	616.....	447.....	0.73.....	April.....	1.02 "
12 to 16 ".....	409.....	420.....	1.05.....	May.....	.80 "
16 to 20 ".....	502.....	545.....	1.09.....	June.....	.69 "
20 to 25 ".....	361.....	796.....	0.93.....	July.....	.77 "
25 to 30 ".....	793.....	724.....	0.92.....	August.....	.97 "
40 to 45 ".....	818.....	613.....	0.75.....	September.....	.75 "
62 to 65 ".....	968.....	525.....	0.54.....	October.....	.94 "
79 to 81 ".....	658.....	332.....	0.51.....	November.....	1.04 "
90 and upwards.....	252.....	99.....	0.39.....	December.....	1.05 "

This table certainly affords strong evidence of the unfavorable influence of cold on old age. The climate of our northern cities is remarkable not only for extreme cold, but extreme heat; the range of the thermometer in many of the northern portions of the United States is double what it is along the Gulf, where we are not only exempt from extreme cold but extreme heat. As might reasonably be expected, the climate of our northern cities presses hard upon the aged, as we *know* it does upon infancy and childhood.

There is still another reason for the great proportion of centenarians seen in Charleston and New-Orleans, which we think will be clearly established before we close. Besides being removed from the fatal influence of extreme cold, the old inhabitants who are thoroughly acclimated are *exempt from the summer diseases of the climate, and have few of winter to contend with*. Life ceases because the machine is exhausted by the wear and tear of time.

It has been contended by most writers on vital statistics, that a large proportion of

centenarians, so far from proving high longevity of a population, is evidence of the reverse; they are said to exist in the greatest proportion in the most sickly places.

This may be strictly true, but we are not prepared to accept the proposition as demonstrated, particularly when laid down as broadly as it usually is. In temperate malarious districts, where the general mortality is very great, it is possible some might not be susceptible to the influence of this atmospheric poison, and amongst the few survivors, a few centenarians would form a large relative proportion; but all this does not prove that every country is a sickly one, where many live to a hundred years. We are satisfied that there are many portions of the south which would show as low mortality for all ages below ninety, and less above that age, than any portion of the north, if the population could be confined to those localities for one hundred years. Charleston and New-Orleans are often cited as instances of sickly places abounding in centenarians, but we shall give good reasons further on for the

opinion, that these cities, to their native or acclimated inhabitants, are, perhaps, the healthiest in the United States.

But leaving out of the question cities, which we shall show have climates and diseases peculiar to themselves, and wholly different from the country which surrounds them, the climate of the gulf coast, including Florida, Alabama, Mississippi and Louisiana, is very imperfectly understood by persons at a distance. Although much has been written concerning the relation which exists between topography of southern countries and miasmatic fevers, all the laws and fine-spun theories of book-makers are put to flight by the facts every day witnessed in this region. Heat, moisture, animal and vegetable matter are said to be the elements which produce the diseases of the south, and yet the testimony in proof of the health of the banks of the lower portion of the Mississippi River, is too strong to be doubted,—not only the river itself but the numerous bayous which meander through Louisiana. Here is a perfectly flat alluvial country covering several hundred miles, interspersed with interminable lakes, lagunes and jungles, and still we are informed by Dr. Cartwright, one of the most acute observers of the day, that this country is exempt from miasmatic disorders, and is extremely healthy. His assertion has been confirmed to me by hundreds of witnesses, and we know from our own observation, that the population present a robust and healthy appearance. Why this is so, it is impossible to say; a country of this character on the Atlantic coast, would be almost uninhabitable by white population. The planters around Charleston desert many places of more favorable aspect, in summer, and retreat to the city for health. The coast of Mississippi, Alabama and Florida, presents in many respects a different topography, and yet is considered a healthy country. In point of temperature this is one of the most agreeable climates in the United States, and the coast is dotted along the whole gulf with delightful watering places and summer residences, to which the population resort for health and pleasure; and yet when you build a town, even on a sandy desert, as at Pensacola, yellow fever springs up and attacks strangers, while the natives are exempt. Whether it be an endemial position of bilious fever or not, yellow fever comes with concentrated population, usurps the field and reigns with undivided sway.

Though many other parts of the south and west present much interest, the main object of our present investigation is the climate of our southern seaports, and on the single point of *acclimation* turns the value of all our conclusions. On this point our northern writers are little informed, and although we

can here but glance at it, we can easily, if need be, bring forward abundant evidence to satisfy any candid man of the truth of the positions we take.

It is now generally admitted that yellow and bilious fevers are distinct diseases, differing in their causes and nature. No one pretends that an attack of intermittent or bilious fever affords protection against yellow fever, or that yellow fever will protect against the former. No one denies that an individual may be attacked an indefinite number of times by intermittents or remittents, or that one attack even predisposes to others, and yet it is agreed on all hands that one attack of yellow fever affords almost perfect immunity against a second, provided the subject confines himself to the yellow fever region, viz., the Atlantic and Gulf coast from Charleston southward. In truth, we may safely challenge a denial of the fact, that *one attack of yellow fever, or a long residence in a yellow fever city, affords a better protection against this disease, than does vaccination against small-pox.* The citizens of Charleston, Savannah, Pensacola, Mobile, New-Orleans, West India towns, etc., may exchange one city for another with perfect impunity.

On the subject of acclimation we are fully borne out by Professors Harrison, of New-Orleans, and Dickson, of Charleston,—two of the best authorities we have. The facts are so well known as to need no argument amongst medical observers.

Yellow fever is generated in crowded populations, perhaps exclusively; while bilious fever, on the contrary, is the indigenous product of southern soils. In fact, there would seem to be something antagonistic in the causes of these diseases. Generally, along the southern seaboard, when the forest is first leveled, and a town commenced, intermittents and remittents spring up, and in some places of a malignant and fatal type. As the population increases the town spreads, and draining and paving are introduced, yellow fever, the mighty monarch of the South, who scorns the rude field and forest, plants his sceptre in the centre, and drives all other fevers to the outskirts. As the town grows, the domain of yellow fever spreads, and the others recede. There is a middle ground where the two meet and struggle for supremacy. Here we see all imaginable grades, from the simple intermittent up to the most malignant yellow fever; but whenever they come in contact, intermittents and remittents are compelled to wear the livery of the master spirit. Here we see the groundwork of the erroneous conclusions of those authors who contend for the identity of intermittent, remittent, and yellow fevers.

Though occasional cases of severe bilious fever may occur in southern seaports, most of which are contracted out of town, *epidemics* of bilious or congestive fevers are wholly unknown. The highest number of deaths in Charleston, during any one year for the last eighteen, from *all* fevers except yellow fever, is eighty-one, and the aggregate for this whole period is but six hundred and fifty-six,—a result which will much astonish those writers who are not familiar with southern statistics. These facts illustrate very clearly the peculiarity of *city climates* and diseases. If the population of Charleston, for example, which has varied little from thirty thousand for the last eighteen years, had been living in the country *around* the city, or scattered through the bilious fever region of the south, no one can estimate within one thousand of the number of deaths which would have occurred during this long series of eighteen years.

The statistics of Charleston show a lower mortality amongst its *acclimated population* than any northern city, and the physicians of Mobile and New-Orleans will give the same testimony in favor of these cities. Mobile and New-Orleans, too, possess the great advantage over the former city, of being surrounded by healthy country. When these cities escape yellow fever, which attacks the unacclimated alone, they enjoy an exemption from all disease which is almost incredible.

Charleston is the only southern city in which bills of mortality have been faithfully kept for a sufficient length of time. We shall now proceed to give more in detail the statistics of this city and the deductions made from them. The bills of mortality of Charleston may be fully relied on, and are peculiarly valuable from the fact that the population has been little disturbed by immigration and emigration, and has not fluctuated much in amount.

The population of Charleston was as follows:—

	White	Colored	Total
1830	12,928	17,361	30,289
1840	13,030	16,231	29,261
102 inc.	1,102	dec.	1,028 decrease.

This table shows that the whole population in the period of ten years decreased 1,028, while the white population alone gained 102. We have good reason to believe from these and other facts, that from 1828 to 1846, the eighteen years embraced by our tables, the fluctuation was of very limited extent.

We have before us a "*Report of the Interments in the city of Charleston, with the name and number of each disease from 1828 to 1846. (eighteen years,) the prevailing diseases in each*

mon/h, etc., thermometrical range, etc., from 1834 to 1846. (twelve years.) By JOHN L. DAWSON, M D., City Register."

Below will be found an abstract of this report, which we have made out with much care from the crude mass of material. This abstract contains a large portion of the *data* from which our conclusions are drawn, and will enable the reader to judge of their legitimacy.

The report and abstract embrace all the deaths and causes of death in the city of Charleston for the eighteen years—it is important to bear in mind, that we have, in the abstract, for the convenience of comparing different epochs, divided the whole term into three periods of six years each. We have also, for the purpose of facilitating comparison with other places, arranged our table on the plan of the distinguished statistician, Mr. Farr, of London—the same plan has also been adopted by Mr. Shattuck in his report on the census of Boston, for 1845, a volume replete with instruction.

The causes of death as laid down in our table are divided into:—First, Zimotic diseases. Second, Sporadic diseases. Third, Old age and external causes, such as violence, poisoning, drowning, &c.

We shall here, as on other occasions, extract freely from our article in the Charleston Medical Journal, as it contains statistics which are new to the readers of the Commercial Review, and necessary to the illustration of our subject.

Zimotic is a term used by Mr. Farr to designate all epidemic, endemic and contagious diseases. It is the property of Zimotic diseases to prevail more at one season than at another, or more in one locality than another, and to become epidemic, endemic, or contagious, under certain circumstances. This class, as it will be seen, includes all fevers arising from morbid poisons, as intermittents, remittents, yellow and typhus fevers; also, small-pox, measles, scarlatina, influenza, &c., and the greater or less number of deaths from this class has been assumed as the best test of the salubrity of the climate.

Sporadic diseases embrace all those which do not belong to the above class, as our table will show.

Old age and external causes cannot be called diseases, and should, therefore, particularly the latter, be separated from the other classes in estimating the influence of climate on health.

The following table, as we have stated, extends over eighteen years, which are divided into three periods of six years each. The aggregate number of deaths for each period is given from all causes, the number from each specified cause, and the per centage which each one bears to the whole.

TABLE I.

ABSTRACT OF THE CAUSES OF DEATH IN CHARLESTON, FROM 1828 TO 1845

CAUSES OF DEATH.	Number of deaths in the periods			In each hundred there were deaths in		
	1828	1834	1840	1828	1834	1840
	to 1833	to 1839	to 1845	to 1833	to 1839	to 1845
All causes.....	4,143	5,229	3,583	1833	1839	1845
Specified Causes.....	3,968	5,080	3,502			
1. Zimotic Diseases.....	952	1,900	765	23.99	37.40	21.83
SPORADIC DISEASES.						
2. Of Uncertain of General Seat.....	506	548	426	12.75	10.78	12.16
3. Of the Nervous System.....	593	605	606	14.94	11.90	17.29
4. Of the Organs of Respiration.....	910	878	813	22.93	17.28	23.20
5. Organs of Circulation.....	16	27	33	0.40	0.53	0.94
6. Organs of Digestion.....	417	549	399	10.50	10.80	11.39
7. Urinary Organs.....	6	2	5	0.15	0.05	0.14
8. Organs of Generation.....	35	51	48	0.88	1.00	1.37
9. Organs of Locomotion.....	21	14	14	0.56	0.27	0.39
10. Integumentary System.....	7	9	7	0.17	0.17	0.19
11. Old Age.....	311	299	226	7.83	5.88	6.45
12. Deaths from External Causes.....	194	198	161	4.88	3.89	4.59

CLASS FIRST.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Cholera.....	.35	0.37	0.11
Cholera Infantum.....	.12	1.23	2.02
Cholera Asiatic.....	.00	7.70	.00
Croup.....	1.08	.76	1.22
Diarrhœa.....	2.62	1.29	.71
Dysentery.....	2.62	1.29	.71
Bowel Complaint.....	2.09	.45	.14
Erysipelas.....	.10	.03	.05
Fever.....	1.08	2.16	1.23
" Inflammatory.....	.10	.15	.05
" Intermittent.....	.07	.09	.68
" Remittent.....	2.34	2.83	1.42
" Country.....	1.96	.68	.31
" Yellow.....	1.46	11.06	.74
" Congestive.....	.00	.07	.34
" Typhus.....	1.23	1.55	2.65
Hooping Cough.....	2.66	1.37	1.74
Influenza.....	.27	.35	.28
Measles.....	.65	.84	.88
Scarlatina and Sore Throat.....	1.96	2.50	3.62
Small Pox.....	1.58	.00	1.51
Syphilis.....	.02	.00	.05
Thrush.....	0.57	.25	.51
Parotitis.....	.00	.01	.00
Dengue.....	.45	.00	.00

CLASS SECOND.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Abscess.....	.85	.35	.37
Atrophy.....	.02	.01	.39
Cancer.....	.65	.29	.85
Debility.....	3.22	2.45	1.90
Dropsy.....	7.18	6.45	6.93
Gout.....	.10	.01	.02
Hæmorrhage.....	.12	.27	.28
Inflammation.....	.12	.09	.00
Mortification.....	.25	.07	.08
Scrofula.....	.30	.39	.34
Tumor.....	.10	.05	.00
Marasmus.....	.27	.29	.77
Spine Diseases.....	.02	.01	.08

CLASS THIRD.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Trismus Nascentium.....	2.31	1.63	4.56
Cramp.....	.20	.00	.00
Nervous Affections.....	.12	.09	.00
Brain—Diseases of.....	.37	.33	.62

CLASS FOURTH.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Asthma.....	.70	.47	.88
Consumption.....	16.75	11.12	16.01
hydrothorax.....	1.76	1.73	1.99
Laryngitis.....	.05	.00	.05
Bronchitis.....	.07	.17	.22
Pleurisy.....	.83	.45	.48
Pneumonia.....	.12	.09	.48
Inflammation of Lungs.....	.30	.57	.59
Hæmorrhage of Lungs.....	.02	.05	.00
Lungs—Diseases of.....	.25	.12	.22
Catarrhal Fever and Catarrh.....	2.04	2.48	2.22

CLASS FIFTH.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Aneurism.....	.02	.07	.08
Heart—Diseases of.....	.37	.45	.85

CLASS SIXTH.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Colic.....	.80	.55	.39
Dyspepsia.....	.07	.05	.14
Enteritis.....			
Gastritis.....	1.51	1.94	2.56
Inflammation of bowels.....			
Hernia.....	.10	.05	.09
Intussusceptions.....	.02	.02	.00
Peritonitis.....	.02	.10	.05
Teething.....	4.03	4.97	5.16
Worms and Worm Fever.....	2.04	1.49	1.13
Liver—Diseases of.....	.05	.01	.00
Jaundice.....	.30	.21	.31
Organs—Diseases of.....	.05	.07	.28

CLASS SEVENTH.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Diabetes.....	.00	.00	.00
Cystitis.....	.00	.01	.05
Gravel.....	.12	.01	.05
Nephritis.....	.02	.00	.02

CLASS EIGHTH.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Childbirth.....			
Puerperal Fever.....	.05	.09	.05
Organs—Diseases of.....	.10	.10	.34

CLASS NINTH.	In each 100 there were deaths in		
	1828 to 1833	1834 to 1839	1840 to 1845
Rheumatism.....	.52	.21	.39
Joints—Diseases of.....	.00	.05	.00

CLASS TENTH.	In each 100 there were deaths in			
	1828 to 1833	1834 to 1839	1840 to 1845	
Fistula.....	.00	.01	.00	
Ulcer.....	.07	.05	.05	
Skin—Diseases of.....	.10	.09	.14	

CLASS ELEVENTH.			
Old Age.....	7,83	5,88	6,45

CLASS	Number of deaths.		
	First Period	Second Period	Third Period
Burns and Scalds.....	8	3	5
Casualties.....	40	55	48
Drinking Cold Water.....	0	0	0
Intemperance.....	93	80	45
Drowned.....	26	36	43
Executed.....	0	1	2
Fractures.....	2	5	1
Cold—Effects of.....	13	7	1
Hydrophobia.....	2	0	1
Murdered.....	0	0	1
Poisoned.....	2	1	2
Suffocated.....	0	4	2
Suicide.....	8	6	10

CLASS THIRTEENTH.			
Causes not specified.....	175	149	90

The reader cannot fail to be struck, on the first glance at this table, by the great disparity exhibited in the gross mortality of the three periods; and the fact is equally prominent that this disparity is attributable to the increase or decrease of *Zimotic* diseases. The mortality for each of the periods was as follows: 4143—5229—3583. From the *Zimotic* class the deaths were in each period, 952—1,900—765, or for each 100 a per centage of 23,99—37,40—21,83. Here is strong evidence of the influence of endemics and epidemics over mortality; and the general fact has been taken as sufficient proof of the insalubrity of Charleston and other cities similarly situated as to climate. The average mortality for a series of years, has been estimated by Dr. Dunglison in his work on "*Human Health*," at one in thirty-six, which places that city below, and very far below,

most of the northern cities of the United States.

The important question now comes up, viz.: who are they that die from these *Zimotic* diseases? Are they acclimated citizens of Charleston, or are they not? And we beg the reader to bear in mind the general remarks which have been made on the subject of *acclimation*. The deaths in the second period of our table exceeded those of the third by 1,135, or 148 per cent. By turning to class 1st in Table I, it will be seen that the deaths from yellow fever in three periods were 58—562—26, a very striking contrast certainly. Look at the heads Fever, Bilious Fever, &c., and we find a greater mortality from these causes also in the second, than in either of the other periods; many of which deaths, no doubt, were erroneously excluded from the head Yellow Fever.

The Table II., which we give below, besides some other interesting facts, reveals the following one, which will go far towards answering the question who are they that die from the endemic diseases of the climate? viz.: the deaths for the "*not natives*" were in each of the three periods, 764—1,418—659, showing that the mortality amongst this class of population rises and falls as these causes act with greater or less force. If the table be taken in detail, year by year, this law is seen to be invariable. In the great epidemic of 1833, for example, there were 482 deaths amongst the *non-natives*, and so on with the other years. A portion of the deaths from yellow fever are amongst native children of the city, who, as we have stated, though far less liable to this disease than foreigners, are not considered as fully acclimated. It should be remembered also, that 392 of the deaths, or 8 per cent. of the second period, were from Asiatic cholera, which should be excluded from the calculation in estimating the influence of climate on the acclimated.

TABLE II.

SHOWING THE GROSS MORTALITY FOR EACH YEAR, AND THE RATIO OF THE WHITES, BLACKS, NATIVES, NON-NATIVES, SEXES, ETC.

	WHITES		COLORED		Total Whites	Total Blacks	Grand Total	Not Native	Native	Deaths of Whites	Deaths of Blacks
	Males	Females	Males	Females							
1822.....	284	142	253	246	426	499	925	—	—	—	—
1823.....	217	132	213	250	349	463	812	185	629	—	—
1824*.....	434	198	222	205	632	427	1059	382	677	—	—
1825.....	228	125	253	234	353	487	840	165	675	—	—
1826.....	203	108	217	236	311	453	764	—	—	—	—
1827†.....	258	124	216	205	382	421	803	—	—	—	—
1828‡.....	232	126	222	213	358	435	793	168	625	1 in 36,14	1 in 39,91
1829.....	183	124	205	250	307	455	762	102	660	42,28	38,15
1830¶.....	209	120	199	235	329	434	763	143	620	39,45	40,00
1831.....	164	114	218	237	278	455	733	150	583	46,69	37,93
1832.....	142	108	161	149	250	310	560	96	464	51,91	55,35
1833.....	145	91	136	170	236	306	542	105	437	55,00	55,75
1834||.....	192	116	158	226	308	364	692	166	526	42,14	44,16
1835¶.....	189	112	176	187	301	363	664	181	483	43,12	46,44

* 236 deaths from yellow fever. † 63 deaths from yellow fever. ‡ 26 deaths from yellow fever. § 33 deaths from yellow fever. || 49 deaths from yellow fever. ¶ 26 deaths from yellow fever.

TABLE II.—Continued.

	WHITES.		COLORED.		Total Whites	Total Blacks	Grand Total	Not Native	Native	Deaths of Whites	Deaths of Blacks
	Males	Females	Males	Females							
1836*	196	123	443	410	319	853	1172	181	991	40,68	19,64
1837	172	102	180	176	274	356	630	144	486	47,37	46,79
1838†	551	158	277	223	709	500	1209	482	727	18,30	33,00
1839‡	307	127	195	227	434	422	1856	264	592	29,93	39,00
1840§	184	73	177	171	257	348	605	179	426	50,70	46,64
1841	120	80	187	173	200	360	560	94	456	65,15	44,80
1842	171	88	165	170	259	335	594	113	481	50,30	47,85
1843||	131	83	237	246	214	483	697	89	608	60,88	32,98
1844¶	109	79	173	192	188	365	553	108	445	69,30	43,36
1845	119	127	153	171	246	324	570	76	494	52,96	48,54

* 392 deaths from Asiatic cholera. † 354 deaths from yellow fever. ‡ 134 deaths from yellow fever. § 23 deaths from yellow fever. || 2 deaths from yellow fever. ¶ 1 death from yellow fever.

Many of the causes of death, which by the too arbitrary arrangement of Mr. Farr, are thrown into class second, are but *sequelæ* of fevers, and in effect should really belong to the first or zimotic class. Debility, dropsy, diseases of the digestive organs, and old age, for example, caused, as our table proves, much the heaviest mortality in those years in which fevers were most prevalent, and consequently pressed with greatest force on the unacclimated. The mortality amongst the whites for the last six years average 1 in 53, and during these years there were few fevers, and consequently few of the *sequelæ* just mentioned.

It is well known that typhus, as well as other epidemic diseases of the North, are either wholly unknown, or press but lightly on the South. What are termed *malarial fevers* are looked upon as the great outlets of life here.

We have already stated that the aggregate number of deaths from all the fevers in Charleston, (excluding yellow fever,) for eighteen years, was but 656; and the aggregate from yellow fever during the same period was 646; and there can be little doubt that the acclimated population of Mobile and New-Orleans are just as much favored.

There is every reason to believe that by proper police regulations, yellow fever might be almost entirely banished from our cities. In Charleston, there have been but two epidemics of this disease in the twenty-two years, and these have been attributed to the great fire of 1838, which destroyed a large portion of the city, and left the cellars, which became filled with water and rubbish, exposed to the summer's sun. In that year, 354 died with the yellow fever, and in the next, 1839, 134 died. In these years, it should be remembered, a large number of unacclimated mechanics flocked in to re-build the town.

In Mobile, from 1829 to 1837, a period of eight years, during which time the streets were beautifully shelled and drained, there was no yellow fever. Since that time, shelling has been neglected, and the disease has occurred five times, and twice as very extensive epidemics.

No doubt much might be done towards improving the health of New-Orleans. A

very sensible and instructive paper on the subject, from the pen of Dr. John Harrison, may be seen in one of the numbers of the New-Orleans Medical Journal.*

It is difficult to obtain well digested statistics of many of our northern cities. Those of Philadelphia some years back, have been made out by Dr. G. Emerson, so well known for his accuracy and ability on this and other subjects. On a comparison of the tables of Dr. Emerson with those of Charleston, it would appear that there are more deaths in Philadelphia from all fevers, including typhus and malarial, than from all fevers in Charleston, including yellow fever. From 1820 to 1830, in Philadelphia, the deaths from fevers were 13 and 5-10 per cent. on all the deaths. In Charleston, for the last eighteen years, including two epidemics, the average mortality from fevers was 11 and 4-10; leaving out yellow fever, which attacks almost exclusively strangers, the mortality from other fevers will not be found to exceed seven per cent.

We must now bring to a close these too brief remarks on the zimotic class. Putting fevers aside, Charleston, as regards cholera, dysentery, diarrhoea, liver complaints, &c., as the table shows, will compare favorably with the northern towns; and when, in addition to these facts, we reflect on the comparative immunity which southern towns enjoy, from other scourges of the zimotic class, viz, small-pox, measles in several forms, scarlatina, whooping-cough, and typhus, (from all of which I have not seen twenty deaths in my practice during the eleven years I have been in Mobile,) we may conclude that the climate of southern seaports is not so very bad after all that has been said against them.

The diseases of the organs of respiration form a very interesting point of comparison between the North and South. Though phthisis here is much more common than even our medical gentlemen are willing to admit, yet no one will contend that as many persons die South as North of diseases of the

* The reader will also refer with advantage to the article on Disease and Health in Southern Cities, by Dr. Hott, in the Commercial Review for March, 1847.—Ed.

chest, including acute and chronic. We have no space here for following out this point, and must refer the reader for our facts to the Charleston Medical Journal.

We give below another table, which will afford data for comparison with other cities on some important points. It embraces the

last six years, the only years for which we have all these details. It includes blacks and whites, and it is to be regretted that the two castes cannot be separated at all ages, as we could thus be enabled to judge better of the effect of climate on each race.

TABLE III.

OF MORTALITY FOR CHARLESTON FROM 1840 TO 1846, SIX YEARS, SHOWING THE MORTALITY OF THE DIFFERENT MONTHS, AND THE AGES AT DEATH.

	Under 1 year.	1 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60
January	35	33	9	11	23	23	28	18
February	29	28	16	12	29	30	31	17
March	37	28	12	14	28	32	27	22
April	52	34	13	23	28	37	40	30
May	67	40	17	33	33	22	30	18
June	74	46	17	24	33	32	25	29
July	86	53	16	24	46	32	27	19
August	85	70	21	22	39	43	30	21
September	57	44	11	24	62	40	35	32
October	40	40	4	14	32	26	37	19
November	53	34	3	20	29	20	27	16
December	44	33	11	18	37	49	35	21
Total	659	483	150	239	420	395	372	262
Average	109.83	80.50	25.00	39.83	70.00	65.83	62.00	43.66
Per centage	18.46	13.53	4.20	6.69	11.76	11.07	10.42	7.34

	60 to	70 to	80 to	90 to	100 to	110 to	Total.	Average.
	70	80	90	100	110	120		
January	17	16	15	6	3	0	236	39.33
February	15	17	7	2	0	0	233	38.83
March	26	16	5	3	3	0	253	42.16
April	24	22	9	4	1	1	318	53.00
May	22	17	8	3	0	1	311	51.83
June	22	11	10	3	0	0	326	54.33
July	22	13	9	2	0	0	349	58.16
August	18	10	6	7	0	1	373	62.16
September	23	16	8	4	1	0	357	59.66
October	17	13	12	6	1	0	271	45.16
November	18	21	7	2	0	0	250	41.66
December	7	13	16	4	3	0	292	48.66
	231	185	112	46	12	3	3569	594.83
Average	38.50	30.83	18.66	7.66	2.00	.50		
Per centage	6.44	5.18	3.13	1.28	.33	.08		

We are forced for want of space to pass this table without comment, and to omit a comparison of North and South by the various methods which have been resorted to by statistical writers in order to determine the longevity of places. Judged by every test, the comparison is favorable to Charleston.

We will remark, in passing, the low degree of mortality amongst children in Charleston compared with northern cities. In Charleston, the mortality under five years is 31 per cent., while in Boston it is 46, and in other northern and European cities the per centage is still greater.

The average mortality for the last six years in Charleston for all ages is 1 in 51, including all classes. Blacks alone, 1 in 44; whites alone, 1 in 58, a very remarkable result, certainly. This mortality is perhaps not an unfair test, as the population during the last six years has been undisturbed by emigration and *acclimated* in a greater proportion than at any former period.

We do not wish to be considered an apologist of southern climates generally; on the

contrary, no one regards the bilious fever regions of the South with more horror than we do. Though we are satisfied that the gulf coast generally and many portions of the Atlantic states will compare favorably with our north-eastern states, we wish it borne in mind that we are now illustrating the climate of seaports alone.

When, then, we take into consideration the fact that yellow fever attacks only the *unacclimated*, and that bilious fevers do not affect to any extent the southern seaports; that these cities are comparatively exempt from many other zymotic diseases, as well as those arising from cold; that tables of mortality include all classes, and that it is only the better classes who apply for life insurance, we have strong reasons for concluding that the mortality in Charleston for the last six years may be assumed as a safe measure for estimating the probabilities of life in that city, as well as in those of the gulf.

We will here bring to a close our imperfect sketch, and must refer the reader who is curious in such matters, to more extended

life statistics, which we have given in the Southern Journal of Medicine, published in Charleston.

The Southern cities cannot expect, nor do they deserve justice on the subject of Life Insurance, until their vital statistics are properly kept. The subject is one of great importance, and should be looked to.

SOUTHERN COMMERCIAL CONVENTIONS.—We were turning over a package of old and valuable documents that had been stored away in our library, a few days since, when it chanced that several pamphlets embracing the proceedings of southern and western merchants on the subject of this trade and commerce, came to light. We turned over their pages with great interest, and marvelled that a movement begun in such a spirit and prosecuted for a time with so much vigor, could at last have been suffered to die away and pass as it were from memory. Where are the men that instituted the conventions of Augusta, of Charleston, and of Macon? Where are those delegates from the Carolinas, and Georgia, Alabama and Tennessee, Florida and Mississippi, whose enterprise appeared to have no bounds? It is scarcely ten years since then. Has anything been achieved that was desired, or has despair seized upon them to deaden and destroy their energies? We would recall those scenes and times. We would bring upon the stage again the actors and the events. Perchance the day will come—a better and a brighter one for the South, for which they sighed.

The last of these conventions was, we believe, held in 1839. There were present from South Carolina, 170 delegates, from North Carolina, 3; from Georgia, 33; from Alabama, 5; from Tennessee, 5; from Florida, 3; Mississippi and Louisiana were not represented.

Among the resolutions adopted were the following:—

“Resolved, 1. That the commercial capital and credit of the southern and south-western states should be so extended and enlarged, as to enable our merchants to carry on the business of direct importations on an extensive scale, and on the most advantageous terms.

“Resolved, 2. That for this purpose, it is highly important that a portion of the capital now absorbed in other pursuits, should be directed to commerce, for which the strongest inducements are now offered by the passage of laws in several of the states, authorizing the formation of limited co-partnerships, and from the reasonable assurance that such investments will be as profitable to individuals as they must be beneficial to the community.

“Resolved, 3. That our banks should extend all the aid in their power to this trade, and afford the necessary facilities for carrying it on successfully, by enlarging the capital and extending the credit of those who may engage in it, to the utmost extent consistent with the safety of these institutions and the public welfare.

“Resolved, 4. That the proper efforts should also be made to bring in foreign capital and credit, in aid

of the resources of own country, and that for this purpose suitable agents should be sent abroad to induce foreign capitalists and merchants to establish agencies and form co-partnerships in our cities, with the assurance of their receiving a cordial welcome and zealous support.

“Resolved, 5. That similar efforts should be made to bring about a co-operation between our merchants and capitalists, and those of Europe, for the purpose of immediately establishing lines of packet ships and steamers, whereby regular communications, at stated periods, may be secured—and that all other proper measures should be adopted to effect, as speedily as possible, this all-important object.

“Resolved, 6. That in the opinion of this Convention, it is essential to the success of any scheme of direct importation, that a demand should be created in our own ports for all the goods so imported, which can only be effected by opening free communications with the interior by an extensive system of rail-roads, canals, and turnpikes, by which the merchants of the interior may be enabled to lay in their supplies on better terms than they could procure them from any other quarter.

“Resolved, 7. That among the measures auxiliary to the important objects we have in view, this Convention cannot but regard as of deep interest and importance, the adoption of the proper means for introducing COMMERCIAL EDUCATION among the youth of our country—the training them up to habits of business and thereby establishing a body of merchants, whose every interest and feeling shall be identified with the country which has reared and sustained them.

“Resolved, 8.” This resolution applied to the revival of the old “Southern Review,” of the palmy days of southern literature, the objects of which were the defence of our institutions and the development of the resources of the slaveholding states.

A committee of twenty-one, of which the venerable and distinguished Chancellor Harper was chairman, and of which the following individuals were members, prepared the report:

Committee—William Harper, Robert Y. Hayne, G. A. Trenholm, J. K. Douglass, F. H. Elmore; C. G. Memminger, A. Blanding, from *South Carolina*. William Dearing, A. D. Miller, D. C. Campbell, A. H. Stevens, J. Phinzy, J. Cowles, from *Georgia*. John H. Crozier and Thomas C. Lyon, from *Tennessee*. Abner McGehee, E. A. Holt, from *Alabama*. Mitchell King, William Patten, from *North Carolina*. James Gadsden, Wm. J. Mills, from *Florida*.

SOUTHERN COMMERCIAL CONVENTION—REPORT OF ROBERT Y. HAYNE, (1839.)—Near two years have elapsed since the first commercial convention assembled in Augusta, for the purpose of promoting “A DIRECT EXPORT AND IMPORT TRADE WITH FOREIGN COUNTRIES.” It was foreseen by the projectors of this great enterprise, that it would be a work of time, and that its final accomplishment could only be effected by the exertion of extraordinary zeal, energy, and perseverance. They were well aware that essential changes in the habits and pursuits of a people—and especially in the course of their trade—could be brought about only by slow degrees. They knew that the end proposed, no less than the means to be adopted for securing it, would come into conflict

with too many deeply-rooted prejudices and conflicting interests, to permit them to escape censure and avoid misrepresentation. In the very beginning, they pointed out these as among the difficulties to be encountered and overcome, before they could expect to reap the full reward of their patriotic exertions. Nevertheless, we have gone steadily forward in the consciousness of rectitude, and under a deep and abiding conviction that the "commercial independence of the South" is too closely connected with the welfare, prosperity, and honor of this quarter of the Union, ever to be abandoned while there remained the smallest hope of ultimate success. The evil complained of is, that the southern and south-western states, while producing near three-fourths of the domestic exports of the Union, import scarcely one-tenth of the merchandize received in exchange for them. The foreign commerce, which derives its existence from the productions of our industry, and which is the unfailing source of so much wealth to others, is carried on by the citizens of other states, causing their cities to flourish, while ours have been falling into decay. The profits of the *agency* by which this trade has been carried on *for us*, has been estimated at ten millions of dollars annually. The annual loss to Georgia and South Carolina cannot be less than three millions, while Mississippi (whose exports even now amount to \$16,000,000,) must lose a million and a half annually. No one acquainted with the present course of trade and the usual measure of mercantile profits, would, we presume, estimate the gains of the northern merchants from the almost exclusive possession of the carrying trade for the South, at less than from 10 to 15 per cent.,* which would exceed

the amount above estimated. The natural, indeed inevitable effect of this state of things upon the plantation states, has been to subject their industry to an indirect tax, which has consumed so large a portion of their annual profits as to deprive them, in a great measure, of the means of accumulating the *capital* equally essential to the success of commercial pursuits as to the general improvement of our country. It has been supposed that with the vast resources of the cotton-growing states, the mere abstraction of a few millions annually, by an unfavorable course of trade, could not very materially diminish their wealth, or impair their prosperity. But let it be recollected, that the sum drawn annually from these states, by the *combined operation* of all the causes which have concurred in diverting to the North the profits of southern labor and capital, are by no means inconsiderable in amount. In addition to the ten millions of dollars yearly abstracted by the unfavorable course of our foreign trade, the ACTION OF THE FEDERAL GOVERNMENT in the collection and disbursement of the public revenues, has operated as a burden to an equal or even greater amount. The system of raising, by duties on foreign goods, nearly the whole amount necessary to meet the wants of the government, including the discharge of an immense public debt, was, of itself, calculated to depress the industry of the cotton-growing states, which was almost exclusively employed in raising the products which were exchanged for the very articles thus enormously taxed. But when these duties were extended to an amount greatly exceeding the wants of the government, ranging from 25 to upward of 100, and amounting on an average to 40 per

* In an able report made by Mr. Porter to the Legislature of Alabama, the following striking views are presented of this branch of the subject:

"Of the two hundred and eighty thousand bales of cotton which find their way to market from this state, probably one hundred thousand reach New-Orleans by the Tennessee and Mississippi rivers, and the balance passes through Mobile. That portion of the amount which reaches Mobile, and is not shipped to Liverpool and Havre through New-York, is shipped directly to the foreign market in vessels owned in the latter city, after being purchased by capital owned there likewise; so that we may estimate the entire amount of our exports of cotton (worth eighteen millions of dollars) has to reach the European market through agents who are not citizens of the state, and upon whom we need not be necessarily dependent. This probably costs us one million eight hundred thousand dollars. But it will be asked, can every producer sell for himself? We say, no; but if we employ agents, let them be our own citizens, who will return the profits they make back into the same community from which they are derived, and the burden will cease to be intolerable. Again—the same channels return us our imports. These consist of dry goods, cutlery, and groceries, which we indirectly purchase to a large amount from Europe and the West Indies, through New-York, by the same agents. If our imports equal in value our exports, which is the stated rule, and those who

thus purchase for us, charge us only ten per cent. which is a very moderate calculation (as we believe imports to the Southern market may be safely arranged at twenty per cent.) we pay upon our imports one million eight hundred thousand dollars. Thus making upon exports and imports three million six hundred thousand dollars, which we pay for the privilege of taking the Northern markets in our route to those of foreign countries. This is a calculation in respect to our own first markets. Add to the amount the expenses and charges upon goods before they go into the hands of the consumers, and the sum total will be very greatly increased.

"If this amount must be paid, why should it not be paid to our own citizens? If we must employ agents, why should we not select those who will return the profits they derived from us, back to us again? Why should not the legislature of the state put forth its most liberal power to attain the people this most desirable end? Why should not the people themselves, while the resources of this noble and prosperous state are full of youth and energy, seize upon an enterprise which thus promises such beneficial results?—results of no chimerical, vague or uncertain character, but taught us by the lesson of facts, ascertained by the best proof—the proof of experience itself.

"If we take the article of cotton alone, and enter into a calculation of the loss occasioned to the planting interest of the South and West by an indirect

cent., imposed for the avowed purpose of affording protection and encouragement to those, the productions of whose industry (free from all taxation) came into direct competition with the foreign goods received in exchange for our cotton, rice, and tobacco, when the vast amounts thus extracted were ACCUMULATED AT THE NORTH, and were expended on the army and navy, the fortifications, public buildings, pensions, and other various objects of national expenditure—the balance being distributed in INTERNAL IMPROVEMENTS—of which we receive but a small share, can it be a matter of wonder or surprise, that even with the richest staples in the world, the South should exhibit the extraordinary spectacle of a country making hardly any progress—while the more favored, though comparatively barren regions of the North, were seen constantly advancing in wealth and prosperity? This UNEQUAL ACTION OF THE FEDERAL GOVERNMENT—as it was, in the first instance, the most prominent cause of the subversion of southern commerce—has constantly operated in *preventing its recovery*, by stimulating the commercial industry of the North, and building up northern cities at the expense of those of the South and Southwest. To show the magnitude of this evil, it is only necessary to advert to the fact, that the gross amount received from customs has been es-

trade, we will be astonished at the result. The estimated crop of cotton for the year ending 30th September, 1838, is 1,891,497 bales. This cotton is transported by sea either to the Northern ports, or directly to Europe. Of this number, 1,165,155 bales go to England; 321,480 to France; 63,009 to the North of Europe; and 25,895 to other foreign ports—making a total of 1,574,629 sent abroad. Deduct this number of bales from the entire crop, and we find that 226,868 bales are used at home, and returned to us in domestic manufactures. It is but reasonable to estimate the freight paid upon the number of bales shipped abroad at one and a half cents per pound. If this be calculated upon 1,574,629 bales, supposing each bale to contain 340 pounds, which gives 535,373,860 pounds, it is shown that the producing states pay for freight alone, \$8,030,607 90. Other charges, such as commissions, shipping, insurance, may be said to amount to at least five per cent. Now the amount of the crop shipped valued at thirty dollars per bale, is \$47,238,870.

Five per cent. upon that amount is ... \$2,361,943 50
To which add the freight, which is ... 8,030,607 90

And you have a total of ... \$10,392,554 40

"This immense amount deducted from a crop of the value of \$47,238,870, is distributed among those who act as the transporting and selling agents of the producer, all of whom live north of the Potomac river. The South thus stands in the attitude of feeding from her own bosom a vast population of merchants, ship-owners, capitalists and others, who, without the claims of her progeny, drink up the life-blood of her trade.

"It cannot be here asserted that a deduction should be allowed for that portion of the Southern crop which is shipped directly from the southern ports to foreign countries. The tonnage register will show that nine-tenths of the shipping employed belong to Northern capitalists.

"Now let us bring this calculation home to Ala-

timated at the enormous sum of nine hundred millions of dollars, nearly three-fourths of which were levied on goods received in exchange for the productions of the South and Southwest, and nine-tenths of it expended north of the Potomac. Now, if one of the effects of this most unjust and unequal system has been to stimulate the industry of the North, and thus to throw the importing business almost entirely into the hands of northern merchants, then it is manifest that we have been deprived of the profits to be derived from the importation and sale of an amount of foreign goods, which, estimated by the value of our productions, could not have fallen far short of a thousand millions of dollars—the entire value of importation being estimated at nearly three times that amount—a sum so vast that the usual profits on the importations would have been abundantly sufficient to have changed the entire face of our country, and given us a capital fully adequate to all the purposes of the most prosperous foreign commerce, and the most extensive system of internal improvements.

But there is another view of this subject, entitled, we think, to more weight than it has yet received. The prosperity of states depends in a far greater degree upon their ACCUMULATED CAPITAL than is generally supposed. A people whose industry is ex-

bama. Her estimated crop of cotton for the year ending 30th September, 1838, is 309,807 bales. This, calculated at four hundred pounds to the bale, gives 123,932,800 pounds.

One and a half cents freight is	\$1,858,842
Commissions, shipping, insurance at five per cent. on amount of crop, is, viz.,	
\$12,392,280, at \$40 per bale, is equal to	619,614
Add one and a half cents per pound for baggage, factor's commissions, transportation to Mobile, which is	1,858,842

Total	\$4,337,298
Deduct this from \$12,392,280, the value of our crop at home, and we have left us	\$8,054,982.

"When, in addition, it is recollected that this amount is again indirectly expended abroad in purchasing our articles of consumption, we will perceive that the most ruinous consequences follow. The destination and disposition of our products for the last twenty years, have not been made subjects of consideration by our citizens, nor their importance estimated. We content ourselves with buying and selling again, without inquiring farther than to know that our crops increase, and that we dispose of them readily. We do not perceive the great drain which is made from us by the capital of others. Foreign capital purchases our produce, but it is taken up instantly by foreign imports. Foreign merchants act as our agents in the two transactions, but spend not a dollar of the money we pay among us again. The immense value of our labor is thus taken abroad, and it is well known that we live humbly, make no expensive improvements, spend little in the luxuries of life, and have few means at the close of the year. Where, then, goes the value of our labor, but to those who, taking advantage of our folly, ship for us, buy for us, sell to us, and after turning our own capital to their profitable account, return laden with our money, to enjoy their easily-earned opulence at home?"

hausted at the bare supply of their wants, can make but small advances in science or the arts. All great public improvements must be the result of *capital*, accumulated by years of successful industry. The man who lives by his labor, has neither leisure nor inclination, and if he possess both, has not the means of improving his own condition. much less of developing the resources of his country. And whatever may be the productions of any country, if the consumption be equal to that production, it is clear that capital cannot be accumulated to any great extent. National wealth chiefly depends on the *excess* of annual production over the annual consumption. This constitutes, at all times, and under all circumstances, A COMPARATIVELY SMALL PORTION OF THE WHOLE ANNUAL PRODUCTION, much the greater part of which must necessarily be consumed in the support of the producers. Now, according to this law of society, which is founded in the very nature and constitution of man, it is manifest that the yearly abstraction, whether it be by the action of the government or the operation of an unfavorable course of trade, of even a comparatively small portion of the annual gains of the people, may so far affect their prosperity as to leave them in the condition of a community making no advances whatever in wealth and prosperity.

If the millions, therefore, which have been abstracted by the government from the southern and south-western states, and expended elsewhere, had been left here to accumulate, and to be applied to all the uses of society; if our citizens even now derived all the profits which our great staples still furnish to the merchants and manufacturers of the North, we would not hear continued complaints of that want of capital, which we are told opposes so great an obstacle to the success of our schemes. The addition of even one million and a half a year (to rate it no higher) to the commercial capital of Mississippi, Georgia, and South Carolina, for the last ten or fifteen years, would at this time have placed these states in a condition of the highest prosperity. One of the most unfortunate consequences of the subversion of southern commerce has been the depriving us of that DIVERSITY IN THE PURSUITS OF THE PEOPLE on which, we are persuaded, the prosperity of every community, in a great measure, depends. The citizens of the southern and south-western states, driven from the animating pursuits of commerce, have, it is undeniable, devoted themselves *too exclusively* to agriculture. With us, the usual routine of business has been, to produce as much cotton, rice, and tobacco, as our land and labor would afford. Whatever profits could be derived from the transportation, sale, and manufac-

ture of these articles, or from the business of conducting the exchanges, we were content to leave in the hands of others. If, at the end of the year, the planter found that he had supported his family, and was not brought into debt, he was well content. The fortunate few whose incomes exceeded their expenditures, were naturally led to the extension of their plantations rather than to the investment of their surplus in commerce or manufactures. Except in the immediate neighborhood of the cities (whose bank and other stocks have commanded the attention of a few of our wealthy planters) the regular course has been to invest the entire profits of agriculture in lands and negroes. The poorer class of planters have thus been induced to sell out their possessions to their more wealthy neighbors, and have gone with the proceeds to other states, while the acquisition of more land, and the production of more cotton have been regarded as the only objects worthy of the attention of those who remained at home. The most disastrous consequences have resulted from this unfortunate habit among our agriculturists. In the first place, the increase of the quantity of cotton thus produced has not been attended by a corresponding increase in the profits of the planter. According to a law in political economy, well understood, and which admits of a few exceptions, a mere increase in the quantity of any article of general consumption, seldom increases its money value in a corresponding degree, while the lessening of the production not unfrequently enhances that value. Hence the practice of the southern planters of devoting their *whole attention* to the increase of their cotton crops is not attended by a corresponding increase in their value. It is a notorious fact, that the shortest crops of this article are not unfrequently the most profitable, and it can hardly be doubted that if the whole surplus of our agriculture for several years past had been applied to other pursuits, instead of being invested in lands and applied to the production of more cotton, the cotton crop would have been worth, at this time, nearly as much as it is at present, while this surplus, invested in commercial or other pursuits, or applied to public improvements, would have added to the wealth and improved the character of our people, and, by diversifying their pursuits, have stimulated their industry and strengthened our peculiar institutions.*

* From what has been here said, we would not be understood as indulging in any fears that cotton is an article, the production of which is at all likely to be *overdone*. It is the cheapest raw material out of which cloth can be made, and is destined, we have no doubt, to supersede to a great extent all manufactures of wool, flax, hemp, and silk; and when shirting and sheeting, sails, carpeting, hats, blankets, and even broadcloths, shall be made, as they shortly will be, entirely of *cotton*, the world will

From this brief review of the subject, it will be seen that the present depressed state of southern commerce has been brought about by causes which, however powerful, have, in a great measure, CEASED TO EXIST, and that the opportunity is now presented, by improving our present advantages, of removing them altogether, and regaining all that we have lost. The national debt of \$420,000,000 has been fully paid. The tariff, already greatly reduced, is gradually receding to the "revenue standard." In a little more than two years, by a proper vigilance on the part of our representatives in Congress, and a firm determination on our own, to *insist*, in the terms of the compromise act, on the reduction of the tariff to the "revenue standard," based on "an economical administration of the Federal Government," with the continued preservation of the blessings of peace, so indispensable to our welfare, we shall soon be relieved from a system which has sapped the very foundations of our prosperity, and reduced us almost to a state of "colonial vassalage." For the rest, we must depend upon ourselves. That the difficulties under which we have labored have not arisen from anything inherent in our situation or character is abundantly proved by our past history. The statistics of the United States enable us to present the world the following statements, exhibiting at one view the true history of the rise, progress, and decay of southern commerce, and pointing out with unerring certainty the causes of that decay. We extract them from one of the documents already published by the convention, which cannot be too frequently read, or too carefully studied.

The time was when the people of the South were the largest importers in the country.

In 1769 the value of the imports of the several colonies was as follows:

Of Virginia	£851,140 sterling.
New-England States	561,000 "
New-York	189,000 "
Pennsylvania	400,000 "
South Carolina	555,000 "

The exports were in about the same proportion: Virginia exporting nearly four times as much as New-York; and South Carolina nearly twice as much as New-York and Pennsylvania together; and five times as much as all the New-England States united.

"The same relative proportion of imports is preserved until the adoption of the Federal Constitution, when we find them to be in the year 1791 as follows:

consume, not only all the cotton now produced, but four times the quantity. Still the quantity produced may be diminished without lessening our profits, and the capital thus diverted from agriculture to commerce and manufactures will be a great gain to the country. The Southern States must always be essentially *agricultural*. It is well that it should be so; slave labor is best adapted to agricultural pursuits. Still we should be great gainers by diversifying in some degree the pursuits of our people.

"Of New-York	\$3,222,000
Virginia	2,486,000
South Carolina	1,520,000

"There are no data to show the imports into the several states from the year 1791 to 1820, but the general fact may be assumed, that the import trade of New-York and other northern states, has been constantly progressing, while that of Virginia and South Carolina has as regularly diminished. From 1821, to the present time, we have sufficient data, and they exhibit the following as the state of the import trade:

Years	New-York	Virginia	S. Carolina
1821.	\$23,000,000	\$1,078,000	\$2,000,000
1822.	35,000,000	864,000	2,000,000
1823.	29,000,000	681,000	2,000,000
1824.	36,000,000	639,000	2,400,000
1825.	49,000,000	553,000	2,150,000
1827.	39,000,000	431,000	1,800,000
1829.	43,000,000	375,000	1,240,000
1832.	57,000,000	550,000	1,213,000

"Thus the import trade of New-York has gradually increased from £189,000 sterling, about \$840,000, in the year 1769, and from about three millions of dollars in 1791, to the enormous sum, in 1832, of fifty-seven millions of dollars! while Virginia has fallen off in her import trade from two and a half millions of dollars, in 1791, to \$375,000 in 1829, and \$550,000 in 1832, not a great deal more than the freight of half a dozen ships!

"From these calculations a few curious facts appear. The imports of New-York were, in 1832, seventy times as great as they were in 1769, and nearly twenty times more than they were in 1791. Virginia, on the other hand, imported in 1829 about one-eleventh of what she did in 1769, and about one-seventh of what she did in 1791. In a period, too, of eight years, the aggregate imports of New-York amounted to three hundred and eleven millions of dollars; those of South Carolina to about sixteen millions, and those of Virginia to about five millions! New-York imported, therefore, in 1832, eleven times as much as Virginia did in eight years preceding, and nearly four times as much as Virginia did in eight years preceding, and nearly four times as much in the single year of 1832 as South Carolina imported in a period of eight years. Again New-York imported in one year, (1832,) nearly fifty times as much as South Carolina in the same year, and about 110 times as much as Virginia.

"Having shown the decline of Southern trade, we proceed to inquire into the causes of it. In the course of our research the reader will discover the prime cause of our present embarrassments.

"The Committee of Ways and Means, in their report of the 5th March last, say: 'Our collectors have had under their control a gross revenue of \$946,000,000, and our land receivers \$107,000,000, making \$1,053,000,000. They not only had control of this vast amount, but they were permitted to pay without warrant from the treasury, and *before the money passed out of their hands*, all the expenses of our custom-houses and land-offices and debentures, which alone amounted to four or five millions annually, and sometimes more.'

"Though we find some difficulty in reconciling this statement with the actual receipts and disbursements of the Government as reported annually to Congress, and with the expenses of collection as discoverable from the sources of information which lie within our reach, without supposing greater losses in the transit of the public funds to the treasury than are stated to have occurred, it is probable that our difficulty arises from our limited means of research, and that the committee are substantially, if not literally correct.

"The nine hundred and forty-six millions of revenue raised from the customs were levied from foreign merchandise, received in exchange for domestic productions; for though the term *customs*, in financial language, embraces duties on tonnage, clearances, light-money, &c., &c., these are comparatively so insignificant that they will not materi-

ally affect the estimate. Those who think differently, may allow for them the odd forty-six millions. Of the domestic productions given in exchange for foreign merchandise, nearly three-fourths were of southern growth—we will say two-thirds, which we know, in the whole estimate, to be under the mark. Without disturbing the vexed question, 'who pays the duties,' we may state, then, what all will admit, that the government has been indebted to southern industry for six hundred and thirty millions of money. If the expenses of collecting one thousand and fifty-three millions of revenue were 'from four to five millions annually and sometimes more,' it may safely be assumed, that the expenses of collecting the six hundred and thirty millions amounted to one million annually. Had the southern people, then, shipped their own produce to foreign markets, and brought the return cargoes to their own ports, they would have had eight and forty millions distributed among them since 1789, simply in the pay of their revenue officers. This would have gone into the pockets of individuals, to be sure; and so goes all that constitutes the wealth of a nation. Here would it have been received, and here expended. Insignificant as it may seem while we are contemplating thousands of millions, when we reflect upon the influence which the comparatively trivial sum received by the states from the surplus revenue has had upon the southern states, we cannot doubt that its effects would have been most benignly felt. This sum divided among the cities of Norfolk, Wilmington, Charleston, Savannah, Mobile and New-Orleans, would have quieted many a disturbed bosom in the trying reign of the protective system. Savannah's portion of it would have defrayed the whole expenses of the government of Georgia for more than thirty years; nor, it is believed, would the portions of the other cities have done less for their states. Whatever the sum may have been worth, we must be considered as having thrown it away ourselves. Let us at least remember, that if the tariff should ever be revived, (and hints to that effect have recently fallen from high authority on the floor of Congress,) a direct trade will in some measure mitigate its rigor; and thus far tend to the preservation of the Union.

"If we suppose the value of the goods upon which the six hundred and thirty millions of duties were levied, to have been but four times the value of the duties, it amounted to \$2,500,000,000. How were these goods brought to this country and distributed? The northern merchant has come hither and bought from the southern planter produce of equal value, abating from the price, all the expenses, direct and incidental, of transportation—he has insured them in northern offices, and shipped them abroad in his own vessels—exchanged them at a small profit for foreign merchandise—brought it home—paid one-fourth of its value to the government—added that amount and all the expenses of importation, and fifteen to twenty per cent. for his profits to the price, and exposed it for sale. The southern merchant has now gone to him; lingered the summer through with him at a heavy expense—bought a portion of these goods—re-shipped them in northern vessels to southern ports—added twenty-five per cent. more to the price, to cover his expenses and profits, and sold them to the southern planter. All the disbursements made in this process, save such as are made abroad, are made among northern men; all the profits, save the southern merchant's, are made by northern men; and the southern planter, who supplies nearly all the foreign goods of the country, gets his portion of them burdened with every expense that the government, merchant, insurer, seaman, wharfinger, drayman, boatman and wagoner can pile upon them. His burdens, of course, are needlessly increased by the amount of the expenses incurred in landing the goods at northern ports, and bringing them thence to southern markets. Every item in the endless catalogue of charges, except the government dues, may be considered a voluntary tribute from the citizens of the South to their brethren of the North: for they would all have gone to our own people, had we done our own exporting

and importing. Will the reader compute the amount of them on twenty-five hundred millions worth of goods, and make a fair allowance for the portion of them consumed at the South?

"In 1835, the long-endured national debt was extinguished, after having absorbed from the treasury about four hundred and twenty-two millions of dollars. The larger portion of this sum was paid to the citizens of the United States; of whom, those residing north of the Potomac were to those residing south of it, in the ratio of 165 to 11; and those in Massachusetts, New-York and Pennsylvania, to those in all the other states, as 150 to 176. Whence, but from their commerce, did the northern states acquire the means of loaning so largely to the government? Whence, but from the same source, did these states acquire the power to loan thirteen times as much as all the southern states put together? And with the power to lend, was it no advantage to them to have been enabled to lend, upon the best security in the world?

"So much for our own voluntary self-improvement. A word or two upon those contributions which we have made to the fortunes of our northern brethren, and which may be denominated compulsory.

"The actual disbursements of the General Government have been about one thousand millions of dollars, exclusive of the surplus revenue. The greater part of this immense sum was disbursed among the several states. A rateable distribution of this fund between the northern and north-western, and southern and south-western states as they now stand, would have been nearly as follows:

According to whole population, as.....	7 to 5
" white "	as.....7 to 3
" representation, as.....	5 to 3
" area, as.....	4 to 5

"How have they actually been? Up to 1830, there had been expended in the several states and territories two hundred and eighteen millions of public money, in fortifications, light-houses, public debt, pensions, and internal improvements; of which sum, one hundred and ninety-five millions were disbursed in the northern and north-western states; and twenty-three millions in the southern and south-western. The national debt constitutes by far the largest item in this account, and it was but equitable that this should be paid to the lenders in the proportions of their loans. But in the matter of internal improvements, the southern division should have received a ninth more than the northern. The disbursements under this head were—north of the Potomac, in round numbers, four millions seven hundred thousand; south of the Potomac two hundred and sixty-seven thousand; or nearly 18 to 1.* Pensions 17 to 2; light-houses (consider our coast) 2 to 1; fortifications, equal but never equal afterward, and never to be equal again. The expenditures on the Cumberland road alone, were about nine times the amount expended for internal improvements in all the southern and south-western states together; and without that, the proportion North and South was as 8 to 1.

"But this gives us a very inadequate idea of the extent of the disbursements in the several states. It touches not the first cost, and the annual expenses of the national establishments, most of which are at the North; nor the pay of the officers, principal and subordinate, in the several departments of the government, most of whom are citizens of the North; nor the ten thousand other items of expense, which go to make up the grand total of \$1,000,000,000. Whoever will take the trouble to follow these expenditures through all their details for a year or two, will come to the conclusion, that of the whole sums disbursed among the states, little short of eight-tenths have gone north of the Potomac, or

* While the above was in the press, the appropriations of the last Congress for internal improvements appeared. They are as follows:

North and north-western states.....	1,189,315
South and south-western states.....	284,000
New-York alone.....	358,443

to citizens domiciled north of the Potomac. About seven hundred thousand dollars of the one thousand millions disbursed, were raised from the customs—that is to say, from duties on foreign importations, two-thirds of which were received in exchange for southern productions. The southern states, then, have virtually put into the treasury four hundred and sixty-six millions of the seven hundred, and drawn out one hundred and forty. The northern states have put in two hundred and thirty-three millions, and drawn out five hundred and sixty, fractions rejected. The effect of these disbursements is like a shower of gold upon a people. They are far better. They clear rivers, improve harbors, and open roads and canals which give permanent facilities to commerce. They plant national establishments, gather villages around them, and found other public works, through which there is a constant stream of treasure flowing from the government to the people in their vicinity."

To this we will only add the pregnant example of the city of Charleston. For several years prior to, and including the year 1807, the imports in the city of Charleston, estimating their amount by *the duties* received at the custom-house—the average rate of duties being then about 12½ per cent.—amounted, on an average, to about *nine millions* of dollars annually. From that period, under the operation of the "restrictive system," the importations (with the exception of three years, from 1815 to 1818, immediately after the peace) *gradually declined*, until 1830. In that year the imports had fallen to *one million*. But from that time, and especially since the "American System" has received a fatal blow, and the government has commenced retracing its steps back to the "Free Trade System," our imports have been *steadily increasing*, so that they now amount to about three millions of dollars, and if we shall go on improving, will soon reach their former amount.

No one can shut his eyes to the inference to be drawn from these facts. It is as clear as the sun at noonday, that if the southern states, prior to the creation of the Federal Government and the adoption of the restrictive system, were actually able to carry on a profitable direct trade with all the world, of which they have been deprived by the causes to which we have already adverted, that these causes being removed, there can be no insuperable obstacle, to the resumption of that trade. Difficulties we certainly shall have to contend with, growing out of our present want of capital, and the established habits and pursuits of our people. But when it is considered that we are proceeding upon such sure grounds—that the end at which we aim, is of such transcendent importance to us and to our children—how can we allow ourselves to despair of success? It surely can require no argument to establish the position, heretofore asserted, and which no one has yet attempted to controvert, that it is the natural course of trade to exchange *directly* the productions of different countries—and that all indirect and circuitous modes of in-

tercourse, must in general be less advantageous to the producers than the direct trade. If then the trade of the South had not, by adventitious causes, been forced out of its natural channels, our cotton, rice, and tobacco, would naturally have found their way across the Atlantic from our own seaports, in ships *owned by our own resident merchants*; and it is equally certain, that the goods received in exchange for those productions would have been returned to us through the same channels. Well then may we inquire, by what extraordinary combination of circumstances, by what "mighty magic," it could have happened, that when the imports of the United States reached the enormous amount of "one hundred and ninety millions of dollars, those of all the Atlantic states, and the states on the Gulf of Mexico, should have amounted only to twenty millions," while, at the same time, out of \$107,000,000 of domestic exports, the latter actually exported \$78,000,000—South Carolina and Georgia furnishing exports to the amount of \$24,000,000, and actually importing only \$3,500,000.

It is vain and idle to allege, that this extraordinary state of things has arisen entirely from the want of capital, or the want of ships—from the unhealthiness of the climate, or the want of enterprise on the part of our people. All of these causes combined are wholly insufficient to account for the extraordinary revolution which has been effected in the course of trade during the last thirty years. The truth is, that the commercial capital that we formerly possessed, and which was then found to be fully adequate to all the purposes of a direct trade, has been abstracted from us, and diverted into other channels by the causes to which we have already adverted, and southern ships and southern commerce, have all shared the same fate.

The objection, that the health of our southern seaport towns opposes any serious obstacle to a direct trade, is altogether imaginary. With the single exception of the yellow or stranger's fever, which seldom makes its appearance at the South oftener than once in four or five years, and from which the cities of the North are not entirely exempt, we are actually subject to fewer fatal epidemics, than our Northern brethren. The bills of mortality of the different cities of the Union will show that the general health of our cities is at least as good as that of the cities of the North. Consumption alone destroys a greater number of lives in the cities of the North, in proportion to their population, than are lost in Charleston and Savannah from yellow fever and consumption combined, deducting from the latter the number of strangers who come here in the last stages of the disease for the restoration

of their health. We will here state for the information of those who have been deceived by exaggerated reports on this subject, that until the past summer, Charleston had not been visited by the yellow or stranger's fever, for a period of fourteen years—that it was then confined, as it always has been, almost exclusively to strangers—the native population continuing to enjoy their usual health—that its continuance was limited to a few weeks, and those not embraced in the usual business season—and that the appearance of the disease has been attributed to extraordinary causes not likely soon to recur. Under these circumstances, the force of the objection founded on the supposed sickness of the seaports of the South and South-west, may be duly estimated. If these cities, however, were really as unhealthy as they have been commonly supposed to be, and, like the cities of the North, were liable to have their harbors closed up by ice, during a portion of the business season, still there would be nothing in all this, to prevent our exchanging *directly* the productions of the South for those of other countries. While our cotton, rice and tobacco, do actually find a market abroad, and are paid for in foreign goods, what possible difference could it make on the score of health, whether our returns were received directly from Europe, or coast-wise from New-York? The truth however is, that from the first introduction of commerce among nations up to the present time, it has seldom happened that any place was found to be too unhealthy for the establishment of an import and export trade, exactly commensurate with its productions and its wants.

We do not complain that our cotton wants a market, or that ships and merchants are not found to carry it abroad and bring back the returns—but what we complain of is, that the profits of these exchanges are enjoyed almost exclusively by those who *do not live among us*, to the great injury of our own people and our own country.

There are three causes, however, which have been assigned for the depression of southern trade, which, it must be admitted, have exerted, and still continue to exert, a powerful influence over our destinies, and which must be removed, at least to some extent, before we can hope for complete success in our present enterprise.

"The first is the want of a commercial *capital* adequate to the great demands of a direct export or import trade.

"The second, the want of a sufficient *demand*, in our own ports, for the goods which, in the event of the establishment of such a trade, would be received at these ports.

"Third, the want of lines of *packets and steamships* running at stated periods between our own ports and those of Europe.

"These are the real difficulties to be overcome, and which must be surmounted, before we may calculate confidently on the entire success of our efforts."

Let us consider each of these in their order.

1st. Capital. To provide the *capital* necessary to carry on the direct trade to the extent desired, these plans suggest themselves. A portion of the capital now engaged in agriculture, should be invested in commercial pursuits. We have already shown that this may be done not only without injury, but with positive benefit to the agriculture of the South and South-west. It is not desired that our planters should leave the cultivation of their fields to engage in the business of the counting-house. All that we would propose is, that they should set apart a portion of their annual surplus, and invest it in commerce. To enable them to do this without risk to themselves, the legislatures of several states have, at the instance of the convention, authorized the formation of limited co-partnerships, by which means the opportunity is afforded to every one of investing such portion of his capital as he may think proper in commercial pursuits, without incurring a risk of losing in any event more than the amount so invested. It has been well observed, that if every planter in our country would invest only the tenth part of a single crop in this way, the deficiency in our commercial capital would be at once supplied. We confidently believe that the profits to be derived from such an investment, would be greater than if the same amount were applied to the usual purpose of making more cotton—indeed, we are persuaded, that the profits of agriculture would not thereby be sensibly diminished, while the profits of commerce would be greatly enlarged. We are well aware, that it is not in the course of human affairs that such a concert of action could be brought about among our planters. But we do hope and believe, that the example already set by so many of our public-spirited and patriotic citizens in this respect, will be followed by others—that limited partnerships will be extensively formed, and that by diverting a portion of their capital to commercial pursuits, our planters will contribute largely to the creation of a capital adequate to all the wants of a direct trade, and thus lay a sure foundation for our success.*

* One of the incidental advantages that would grow out of this diversion by our planters of a portion of their capital from agriculture, would be the establishment of some of their sons as merchants, instead of devoting them as at present, almost exclusively, to the learned professions—in which so few succeed—or setting them with a few negroes to plant worn-out lands, the usual consequence of which is emigration or ruin. It is impossible to estimate too highly the advantage of preparing by *SUITABLE EDUCATION* a portion of the youth of our country of the most respectable families, for *MERCANTILE PURSUITS*. Such a measure, if generally adopted, would, by elevating the mercantile character, and connecting our merchants closely with all the great interests of the state, give increased dig-

Credit also may, to a great extent, be made to supply the place of capital for the purposes of the proposed trade. There is no one who is at all acquainted with the usual course of trade, who does not know, that the amount of money used in commercial operations, whether consisting of gold or silver, or bank bills, is very inconsiderable in proportion to the total value of the exports and imports of a country. These usually balance each other. And as our cotton exported is paid for by the goods imported, the great mass of the business is carried on through the medium of bills of exchange. The course of the business as now carried on through New-York, affords an apt illustration of this position. The New-York merchant, when he orders his Charleston correspondent to purchase for him a cargo of cotton, directs him to draw on him for the amount, and these drafts he meets by bills on Liverpool drawn upon his agent there, who pays them out of the proceeds of the cotton, when sold. The goods shipped for the southern market *via* New-York, pass through the same process, and thus it often happens that the whole operation is effected without the actual use of any money, except, perhaps, the amount for which the bills are in the first instance sold in this country, which goes into the hands of the factor, thence passes into those of the planter—is paid to the merchant for goods, and by him returned to the bank from which it was originally borrowed. Credit, therefore, it will be seen, comes largely in aid of capital in all these operations. It is credit which has furnished the merchants of New-York with by far the greater portion of their available means, by which they have been able to monopolize so large a portion of the southern trade. It is not intended to intimate, that the introduction of an increased amount of capital is not indispensable to any great extension of our direct trade—all that we mean to say is, that the amount required will not be so great as is commonly supposed—certainly not so large as to oppose any insuperable obstacle to its acquisition. Our banks have already done much, and will doubtless do much more, to further an object in which these institutions, in common with the whole community, have the deepest interest. Under a recommendation made by a former convention, some of our banks have established credits in Europe, the use of which has, to a considerable extent, been given to the direct importer on the most liberal terms. It is very desirable that all of

nity and importance to commercial pursuits. Though we may not be able to bring back the golden age of commerce, when "Merchants were Princes," we may reasonably hope to see them occupying a station and performing a part equal in dignity and importance to that of the most elevated ranks in society.

these institutions should follow this example. But the furnishing credits in Europe is not sufficient; the banks must likewise enable the importer to realize the price of his goods sold on credit to the country merchant, in time to meet his engagements to those institutions. This can only be effected by freely discounting the paper received for these goods, "whether the same shall have more or less than six months to run." The co-operation of the country banks in collecting and remitting the proceeds of such paper to the banks on the sea-coast, will also be extremely desirable. We are aware that there are limits to business of this character, which the banks cannot prudently transcend. But we are satisfied, that if all of the banks in our southern and south-western importing cities would agree to lend themselves to this object, so far as they could with a due regard to their own safety, the aid thus received would go very far indeed to advance the direct trade. But the great source to which we look with entire confidence for the supply of all deficiencies in this respect, is the introduction of foreign capital. While England, our great customer, is abounding in capital, seeking investments at half the rates of interest allowed in this country, what but a want of *confidence* (resulting from a want of *information*, and of established commercial connections here) could possibly prevent the introduction of any amount of British capital necessary to carrying on the direct trade between Europe and America. We know that before this trade was driven from our ports by the causes already stated, foreign capital was to a very large amount actually employed in that trade—that British houses were established here, and that a very successful business was thus, for a long time, carried on. Why should not this business be now revived? Let the proper measures, then, be taken to inform foreign capitalists of the opening now presented at the South for the profitable employment of their capital among us. Let them be induced to establish agencies and to form co-partnerships among us, for carrying on the direct trade. Let them be brought to unite with us in the establishment of regular lines of packet-ships and steamers, to arrive at stated periods at our principal ports—and our work will be done. And can they not be persuaded to do this? To effect it, nothing more can be necessary than to give them the requisite information. A commission, composed of a few of our most intelligent and experienced merchants, charged to make known the wants and resources and desires of the plantation states on this subject, would, we are satisfied, find no insuperable difficulty in effecting the object, either in England, France or Holland. Let them be authorized to say in our behalf, that the whole southern and

south-western country has been raised up from its lethargy, and is now not merely deeply sensible of the vast importance of this trade, but unalterably determined to establish and extend it. Let them go prepared to exhibit our resources, and invite them, in the name and behalf of our people, to unite with us in doing whatever may be necessary to establish a direct import and export trade on a permanent basis. Let the avenues already opened, and daily extending in all directions, for the transportation of goods into the interior for the supply of the wants of that vast and fertile region, be pointed out to them, and the transcendent importance of these connections be fully explained and illustrated—and, above all, let them be assured, that in engaging in this business, they will find among our people a general disposition to countenance and support them by all the means in our power—and we cannot bring ourselves to believe that the merchants and capitalists of Europe, can be so blind to their own interests, as to hesitate to engage at once in the work, with that spirit which characterizes all their enterprises.

Such are the various resources to which we may look with a becoming confidence for the creation of the capital and credit necessary to the perfect success of our great scheme. It will be seen that they are abundantly sufficient. It is by no means essential to our success, however, that they should all be brought at once into full operation. The good work once begun, must and will go on. We have dwelt thus largely on this point, because it presents to the minds of practical men the greatest difficulty in our case.

2d. INTERNAL IMPROVEMENTS.—Equal in importance to the creation of a sufficient capital for carrying on the direct trade, is the furnishing a market for all the goods that can be imported—indeed, it may be assumed as indispensable to our success, that rail-roads, canals, and turnpikes, must furnish the great channels of communication through which the goods brought into our ports must find their way to the consumers in the interior. Fortunately for our enterprise, the southern and southwestern states are now engaged in various schemes of improvement, all having in view the extension of the connection between their commercial cities and the inhabitants of the interior. From Virginia to Florida inclusive, and from the Atlantic to the Mississippi and the Ohio, rail-roads are everywhere in progress, which, when completed, will afford the ready means of supplying our whole interior country with foreign goods in the shortest time, and on the cheapest terms. By these several lines of communication, the country merchant will find a ready access to our ports, where he will be able to lay in his supplies on at least as good terms as he could in New-York, in addition to the saving of time and money, in avoiding the tedious and cir-

cuitous routes through which he now receives his supplies from that city.

In the mean time, and until these rail-road connections can be established, prompt measures should be adopted, and especially by rail-road companies, to establish lines of communication by wagons, from the *termini* of these roads to the points where a demand may exist for the goods so transported.

In the "Address to the Citizens of the United States," issued by the Convention which assembled in Augusta in October last, statements were submitted which showed conclusively that the cost of importation from New-York to the interior towns of the southern and southwestern states, greatly exceed what would be incurred on the importation of similar goods through our own ports when conveyed by rail-roads into the interior, even if charged with the highest rates of transportation. From that statement it appeared that while the expenses now incurred on the importation of \$10,000 worth of goods from New-York into Montgomery, Ala., amounted to \$1,333, the same amount of goods might be received by rail-roads through Charleston or Savannah, at a cost of \$451, making a saving, by means of the direct trade and rail-road transportation, of \$931 34, upon an investment of \$10,000; and if the purchase were made in Mobile, and the goods transported by the river, the difference would be still greater. Results equally striking are exhibited on a similar importation to Knoxville, Tennessee. It has indeed been ascertained that on 362,000 lbs. weight of goods imported into Knoxville by a house in 1836, the first cost of which was \$70,000, and brought by land and water from Baltimore, New-York, Philadelphia, and New-Orleans, the charges amounted to \$13,750—near 20 per cent. on the first cost, the time required being on an average sixty days; while the time required by a rail-road would be three days, and the charges would not exceed \$5,063—less than one-half of the present cost.*

We refer to these cases merely as affording an illustration of the facilities that will be afforded by rail-roads for the disposal of all the foreign goods, that, under a system of direct trade, can be brought to our ports in exchange for our productions. The two branches of this system are so interwoven with each other, that they cannot be separated without the destruction of both. We have constantly before our eyes, however, a striking example of the effect produced by these communications with the interior upon the course of trade, which it is proper we should refer to, because the members of this body will now

* See address in behalf of the Knoxville Convention, p. 41. Now that Charleston is connected with the Tennessee River and the valley of the Mississippi, these reflections will more naturally occur. Charleston is rapidly building railroads to her mountains.

be enabled to inform themselves fully upon the subject. The Charleston and Hamburg railroad has already, in a great degree, effected a revolution in the trade of this city.* Seconding the efforts made by a number of public-spirited merchants, who have engaged largely in the wholesale importing business, the directors of this road have been enabled to furnish facilities to the country merchants for visiting this city, and inducements for laying in their supplies here, which have already enlarged the business to an extent far exceeding the expectations of the most sanguine of our friends. Indeed, under the impulse which the public mind has here received by the proceedings of our Convention, the construction and projection of rail-roads, and the revival of trade, calamities which at former periods

of our history might have left Charleston for many long years a mouldering heap of dust and ashes, have served only to invigorate her efforts, and strengthen her resolution, and thus to lay the foundations of a more deep-rooted and abiding prosperity. The same influence has been felt in Savannah and Augusta, and indeed in all the cities of the southern and southwestern states where similar works of internal improvement have been executed, or are now in progress. So far, then, as this branch of our scheme is concerned, it is only necessary that we should persevere. We will only add, that these great works should be carried on in a liberal and patriotic spirit, without jealousy and distrust, with a determination to build up in the southern and southwestern states one grand system, every portion of which, like links in a common chain, may tend to bind together all of its parts.

* HISTORY OF THE CHARLESTON AND HAMBURG RAILROAD.—Alexander Black, Esq., of Charleston, politely furnished us, when in that city, with one of the first annual reports of the Board of Directors of this road in 1833. From this we learn that the books of the Company were opened for subscription 17th March, 1828. Half the stock was taken. The Company was organized May, 1828. There was but one other road in the Union, the Baltimore and Ohio, which at all approached this in contemplated magnitude. The Board constructed an experimental road of five miles in length, which we remember to have seen worked by wind and sails as a school-boy holiday. In August, 1830, the stock was increased to \$581,340 and the road at once authorized. On 15th November, Mr. Allen, as chief engineer, examined the route of location. He reported a line 14 miles shorter than expected and five miles less than the commonly traveled road. On 28th Dec. Messrs. Gifford, Holcomb & Co., contracted for building four miles of road, and 17th March, 1831, Messrs. Gray & Conty contracted for 30 more. The eastern division to Branchville, 62 miles from Charleston, was opened for public traveling 7th November, 1832—being one year, ten months and twenty-one days from its commencement. On 7th May it was opened to Midway, 72 miles. In May, 1833, says the Report of Major Black, "the track is opened by felling the trees, two hundred feet wide, throughout the line, except within nine miles of the city, and a few miles in the valley of Horse Creek, near Hamburg, which has been deferred, owing to the reluctance of some of the landholders to have their timber destroyed."

"The excavations are entirely completed. Ditches and lateral drains, sufficient for present purposes, are formed. All the bridges to accommodate the public, neighborhood and plantation roads are built; the foundation, whether consisting of piles, sills, sleepers, or trussel work, is completed for the whole distance of 136 miles; the caps and transverse pieces are permanently fixed on for the distance of 135½ miles; the rails are laid and keyed, for 134¾ miles; all requisite braces for stiffening to strengthen the road is completed for 134 miles; the iron is spiked down permanently for 98 miles; and the surface is prepared for 24 additional miles. Nine turn-outs or passing-places have been constructed; twelve pumps or watering-places have been established. The iron for Ware's contract, six miles, is delivered, and the balance of the road has its surface prepared for the reception of the iron, except about 14 miles."

"Amidst the many disappointments and difficulties, necessarily arising in an undertaking so novel and extensive, it must be matter of gratulation to reflect that the line of railroad, now finished, on which our engines travel, is greater in extent (in consecutive miles) than any other in the world."—

EDITOR.

3d. LINES OF PACKET-SHIPS AND STEAMERS.—The last point to which we deem it necessary particularly to advert, is the establishment of a regular line of packet-ships and steamers. This we deem to be indispensable to any success at all commensurate with our just expectations, or the vast extent of the productions and resources of the southern states. Practical merchants alone can duly estimate the importance of being able to command their supplies from abroad, at all times, and at the shortest notice. The state of the markets, and the actual or expected demand for goods, must regulate importations, and if these goods cannot be directly imported when they are wanted, they must be imported through New-York and the other northern cities. It is true that the extension of the direct trade will of itself have a tendency to supply the requisite means for carrying it on, both as respects capital and ships; but as a first step it would be of incalculable importance that a regular line of packets to our principal seaports should give the same facilities to our southern importers that are now enjoyed by those of New-York. With these facilities our merchants would be enabled to enter into fair competition with the merchants of New-York, Philadelphia, and Boston. We have already indicated the best, if not the only means of effecting this object. We recur to the subject here only to impress as deeply as possible upon the minds, not only of the members of this body, but of our merchants and fellow-citizens generally, the absolute necessity of exerting themselves promptly and strenuously for the immediate removal of this difficulty. Something may be effected by a concert of action among ship-owners now engaged in the direct trade; but it is chiefly by the formation of companies or co-partnerships, composed of American and British houses, that success in this object is to be secured. In one way, however, we may all render essential aid, not only in the accomplishment of this object, but in promoting all those measures on which the success of our whole

scheme depends, viz.: by contributing to enlighten the public mind, by acting on public opinion, and exerting an influence in every way for the promotion of the object. If the people in this quarter of the Union could become duly impressed with the magnitude of this question, and the vital interests involved in it; if they could only be brought to feel in all its force the withering influence of the existing system on their prosperity and welfare; could they but realize the immense losses annually sustained by our being rendered tributary to the cities and merchants of the North, and perceive the incalculable advantages that would flow from the establishment of the commercial independence of the South and southwest—then might we confidently rely on the continued display of that noble zeal, that determined energy, and untiring perseverance, which, trampling down all opposition, would in the end assuredly crown our efforts with triumphant success.

In the attempt to enlighten the public mind, and influence public opinion on this subject, there is one instrument which may be successfully used, not only for the accomplishment of our present object, but also for the protection of all the other great interests of the slave-holding states—we allude to the establishment of one of those periodicals, which, in modern times, has been found to exert almost a controlling influence over the sentiments and opinions of mankind.

If the press has effected a revolution in the moral condition of the human race, and is still found to exert a supreme dominion over the mind of man, one of the most imposing forms in which its mighty power has ever been exerted, is that of Reviews, which, conducted by master minds, and embodying the great truths of science, philosophy, and politics, are well calculated to form and control opinion, and thus to direct the conduct of men. While other quarters of the Union have such organs, through which to disseminate their principles and opinions, and to maintain the policy best adapted to their situation and institutions—the slave-holding states will never stand on an equal footing, until they too are possessed of a faithful exponent of their principles. The revival of the Southern Review is, therefore, an object of great interest to the South, and we would earnestly recommend that the earliest occasion should be seized for its re-establishment on a permanent basis.

In prosecuting the views which have been thrown out for the consideration of the Convention, we utterly disclaim any unfriendly feeling towards our northern brethren, or any portion of the Union. Though we openly avow our object to be the restoration of our trade, we shall attempt to effect it only by fair and honorable means, and in a spirit of generous rivalry. And though we have strongly deprecated the "unequal action of the federal government," which, under a system of

high duties, and extravagant expenditures, has operated so injuriously to our interests—yet we present these views, not in the language of complaint, much less in a spirit of *disaffection*—but as truly indicating the causes of the evils for which it is now proposed to provide a remedy. Nor do we wish to be understood as intending to exclude the productions of the northern states from our estimate of the advantages to be derived from a direct trade. Our object is, free and open trade with the whole world—and all that we desire is, that in carrying on this trade, whether at home or abroad, our own ships and our own capital should be duly employed, and our merchants be allowed to participate in its advantages.

SOUTHERN COMMERCIAL CONVENTION.—REPORT OF GEORGE M. DUFFIE.—Of the numerous subjects deeply and intimately connected with your permanent prosperity and happiness, which have, during the last fifteen years, demanded of you all the consideration which your intelligence could bestow, and all the exertions your patriotism could contribute, none have come more directly "home to your business and your bosoms," than that upon which we now propose to address you.

The struggle in which you were so long engaged, in relieving your commerce from the burdens imposed upon it by partial legislation, has been terminated by a compromise, which, if finally carried out in the liberal and magnanimous spirit in which it was conceived, cannot fail to perpetuate the political harmony which it was the means of restoring. But it is not to be disguised, that the system of high protecting duties, falling mainly upon the productions of the exporting states, combined with the system of federal disbursement, which expended the revenue resulting from those duties almost exclusively in the northern states, has converted the slight superiority originally possessed by the northern cities, in the business of foreign importations, into an overwhelming preponderance, and diverted almost the whole of the immense commerce of the southern and southwestern states into artificial, circuitous, and unnatural channels. In the commercial relations of extensive and wealthy communities, it was to have been expected that effects would for some time survive their causes; and accordingly that portion of the commerce of the United States which is appropriately our own, consisting of an exchange of our agricultural productions for the manufactures of foreign countries, is still carried on principally through northern cities, by the agency of northern merchants, who levy a transit duty—voluntarily paid, to be sure, but utterly incompatible with a just and enlightened view of our own interests.

Now that the system of compulsory tribute is greatly reduced, and rapidly coming to a

close, we are called upon, by every consideration of enlightened self-interest, to signalize our complete commercial emancipation, by throwing off this system of voluntary tribute, which can continue only by our consent and co-operation.

A candid and dispassionate survey of the actual condition of our foreign commerce, as compared with our great natural advantages, will demonstrate that to bring about this consummation, "so devoutly to be wished," by every patriotic citizen of the southern and south-western states, nothing more is necessary than a resolution on our part to accomplish it. To will is to do it.

A brief analysis of our foreign commerce will now be presented. Taking the imports and exports of the United States for the fiscal year 1836, as a criterion, we have the following extraordinary statistical phenomena:

The imports of the whole of the United States, amounted, in round numbers, to \$190,000,000. Those of New-York alone amounted to \$118,000,000, while those of all the Atlantic states south of the Potomac, and the states on the Gulf of Mexico, amounted to only \$20,000,000, and those of South Carolina and Georgia to only \$3,400,000. During the same year the domestic exports of the United States amounted to \$107,000,000, of which New-York exported only \$19,800,000, against an import of 118,000,000, while the states south and south-west of the Potomac, exported 78,000,000 against an import of only \$20,000,000, and South Carolina and Georgia, each having a commercial seaport, with a safe harbor on the Atlantic, exported \$24,000,000 against an import of only \$3,400,000! The contrasts here exhibited are absolutely astounding, and it is confidently believed they are without any parallel in the history of independent states. New-York, it will be perceived, imported six times the amount of her exports, while the southern and south-western states imported little more than one-fourth of the amount of theirs, and South Carolina and Georgia imported less than one-seventh part of the value of theirs. The case of these two states furnishes the fairest criterion for determining the degree of that ruinous disparity which exists between the exports and imports of the states which produce the greatest agricultural staples, which are almost the sole foundation of the foreign commerce of the whole Union.

New-Orleans, from its geographical position, imports West India productions for the Valley of the Mississippi, and specie from Mexico for the United States generally—articles which are not obtained in exchange for the staples of the south-western states, and form no part of the commerce by which those staples are exchanged for foreign productions. If only that part of the imports of New-Orleans which is obtained from abroad in exchange for cotton, were taken into the

estimate, the aggregate imports of all the staple-growing states, like those of South Carolina and Georgia, would no doubt sink down to less than one-seventh part of their exports.

Such being the actual state of our foreign commerce, it deeply concerns our welfare to inquire, in the first place, whether it is a sound and natural condition of this great interest? and if it be not, what are our available means of placing it in a natural and healthful condition?

That it is neither a natural nor a salutary condition, will be apparent from a few obvious considerations. Viewing the subject as one strictly of political economy—and in that light only are we now considering it—New-York, Pennsylvania, and Massachusetts are, for all such purposes, to be regarded by the staple states as foreign communities; not less so than Great Britain and France. The bonds of our political Union, as confederated states, however they may bear upon other aspects of the subject, have no bearing whatever upon the question of national wealth as it relates to the several states. The federal constitution, giving it the utmost amplitude of construction, cannot annihilate the intervening distance of a thousand miles; nor has it annihilated the separate and independent organization of the states. We cannot, therefore, regard the wealth of New-York or Pennsylvania as the wealth of South Carolina or Georgia, or as contributing towards it, upon any other principle than that mutual dependence happily existing between commercial communities, which makes the prosperity of the one conducive to that of the other, in proportion to the extent of the exchanges of their respective productions. Every cotton planter must have perceived, that the price of his staple depends more upon a prosperous condition of the trade of Manchester, than upon that of all the cities of the United States, north of the Potomac. And, however it may shock the nerves of that false and mistaken philanthropy which sometimes assumes the guise of patriotism, we must be excused for "confessing" the homely virtue of preferring the prosperity of our own respective communities, though derived from a direct trade with foreign countries, to that of our northern confederates, derived from the same sources, but at our expense.*

Applying these plain and obvious principles to the existing state of our commercial relations, it is apparent that the profit made by the merchants of New-York and other northern cities, upon the exchange of our staples for foreign merchandise, is as effectually abstracted from the wealth of the staple-growing states, as if those cities belonged to

* Mr. M'Duffie is here assuming the extreme doctrines of Free Trade and State Independence.

a foreign jurisdiction. We are very far from complaining of our fellow-citizens of the North for reaping the golden harvest which circumstances presented to their enterprise. They deserve commendation rather than complaint. Our purpose is to stimulate the enterprise of our own merchants; to recover, by a fair and equal competition, the advantages they have lost; and to invoke the patronage of our fellow-citizens generally, to sustain them in such a competition, and such a competition only. We should ourselves furnish an example of that mock patriotism of which we have spoken, and which is too often used to disguise a selfish purpose, if we were to advise our fellow-citizens to purchase from our own importing merchants, when better bargains could be obtained from our northern competitors. We only ask a decided preference when the terms are equal, and shall endeavor to show in due time that such terms can be afforded, with a liberal profit to our importers.

We propose now to exhibit a rough estimate of the *annual loss of the exporting states by the indirect course of their foreign trade*; or, more accurately speaking, of the annual addition that would be made to their wealth, by the establishment of a direct export and import trade with foreign countries. The excess of the exports of the southern and south-western states beyond their imports was, in 1836, sixty millions of dollars. As the value of our imports always exceeds that of our exports, even when our importations are not excessive, by an amount equal to the increased value of our exports in foreign markets beyond our custom-house assessment, and the estimated cost of importing the merchandise obtained in exchange for them, it may be safely assumed, that the northern cities imported in the year above stated, seventy-two millions of foreign merchandise, which was purchased by the staples of southern and south-western states, and fairly constituted a part of their foreign commerce. Estimating at 15 per cent. the profits of the northern merchants, and all the expenses and risks incident to the transshipments and transfers of an indirect instead of a direct route to the seaports of the southern and south-western states, it follows that the people of these states sustained a loss of \$10,800,000 in that year, by the indirect course of their foreign commerce. By the same process of reasoning, we reach the conclusion that Georgia and South Carolina sustained a loss, in the same year, of \$3,000,000. In coming to this result, however, it is assumed that foreign merchandise can be imported as cheaply into our southern Atlantic cities, as into the cities of the North. This assumption, however contrary or preconceived opinions, is believed to rest upon the solid foundation of undeniable facts. A great deal is habitually said about the natural advantages of New-York as an importing city; and

these are taken for granted, without reflection, from the mere fact of her great commercial prosperity. But what are these natural advantages?

She is, no doubt, from her position, the natural emporium of the foreign commerce of most of the New-England and middle states, and by her magnificent canal, she will continue to command the trade of the north-western states, until an equally or more magnificent channel of internal commerce shall supply the whole Valley of the Mississippi with foreign merchandise, by a shorter and cheaper route, through the seaports of the South. But the question still recurs, where are her natural advantages over the cities of the South, or the Atlantic, or the Gulf of Mexico, for carrying on the foreign commerce of the staple-growing states? Does the Atlantic present a smoother surface or safer navigation between Liverpool and New-York than it does between Liverpool and Charleston or Savannah? Do merchant vessels enter the harbor of New-York under more propitious gales, or ride in it with more safety, than in the harbor of Charleston? These questions are conclusively answered in the negative, by the fact, known to every merchant who is practically acquainted with the subject, that freights from Liverpool to Charleston or Savannah, are actually lower than from Liverpool to New-York. This is one of the natural incidents of a direct trade. Vessels coming from Europe for cotton, would of course prefer bringing merchandise to a great cotton market, where a direct exchange could be effected, than to a city a thousand miles distant from the market, involving the necessity of a coastwise voyage, in addition to that across the Atlantic. If, then, merchandise can be transported from Liverpool to Charleston or Savannah, cheaper than to New-York, what other element in the cost of importation turns the scale in favor of New-York? Are house-rents, and the general expenses of living, lower in New-York than in Charleston or Savannah? House rent is notoriously much higher in New-York than in any of our southern seaports; and if the concurrent testimony of travelers is to be credited, the expenses of living there, and every species of common labor, are greatly beyond what they are in Charleston or Savannah. It is thus that the alleged natural advantages of New-York, so far as relates to the trade of the South, vanish, when exposed to the test of scrutiny, and resolve themselves into the mere beauties of a magnificent harbor.

But we not only deny the alleged natural advantages of the northern over the southern Atlantic cities, for carrying on the exporting and importing business of the staple-growing states, but we assert that the natural advantages are incontestably on the side of our own seaports. What is the commerce in question, divested of the factitious ap-

pendages of an artificial system, but simply an annual exchange of cotton and other staples, to the amount of some eighty millions of dollars, for merchandise imported from England, France and other foreign countries? It is perfectly plain, therefore, that the more simple and direct the operation, the less complicated, involved and mystified, the cheaper will the foreign manufacturer obtain the cotton, and the American cotton planter the merchandise for which it is exchanged.

The foreign manufacturers, and the American planters, are equally interested in establishing this system of direct exchange; and it can only be effected by bringing the foreign manufactures directly to the cities of the cotton-growing states, and making these, instead of New-York, the great marts for vending foreign manufactures on the one hand, and the raw material on the other. Considering the obvious economy of this direct system of exchanges, it seems strange that the foreign manufacturers have not established their agencies, both for selling goods and purchasing cotton, in those cities in preference to others. Cotton can certainly be obtained cheaper in New-Orleans, Mobile, Savannah, and Charleston, than in any northern city; and manufactures can as certainly be sold on better terms, for the consumption of the cotton-growing states, if they will bear the expenses, charges and risks of an indirect importation through New-York. But no just estimate can be formed of the benefits of this proposed system, which does not embrace its tendency to supersede, not only the complex machinery of intermediate transfers and agencies, required in an indirect trade, but to a very great and salutary extent, the use and agency of money. Money is itself a very costly agent, and wherever a direct exchange of commodities, or in other words, barter, can be substituted for successive sales and purchases, the use of the sum of money that would have been required to effect these sales and purchases, is superseded by the direct exchange, and is just so much saved to the parties concerned.

In the extensive operations of foreign commerce, a very near approach can be made to this system of barter. Indeed, our great agricultural staple possesses a two-fold attribute. This is an invaluable article of consumption, and at the same time, while passing from the producer to the consumer, without any additional cost to society, it performs the functions of money, or bills of exchange. And in the disordered state of our foreign and domestic exchanges, and of our money currency, which threatens a long continuance, this inappreciable production of our favored soil and climate, promises to become a still more important agent in the

transactions of our commerce. Does not this, we confidently ask, give to the seaports of the cotton-growing states a most decided advantage over their competitors at the North? The cotton of the South and the southwestern states is the actual capital which sustains four-fifths of our foreign commerce. To that extent the credits obtained in Europe are obtained upon the faith of that capital alone. Shall the people of the South and southwest, with these palpable facts staring them in the face, any longer remain obnoxious to the reproach of owning and furnishing the capital of our foreign commerce, and yet permitting the people of distant communities to enjoy its golden profits? Every consideration, public and private, of patriotism and of interest, decidedly forbids it. A field of honorable competition and profitable industry is opened to our enterprise, where the public benefactor and the private trader, the patriot and the merchant, will be united in the same person. If the Medici of modern Italy, while they acquired incalculable wealth, added a princely lustre to their house, by embarking on such a field of enterprise, what citizen of our republican states would hesitate to blend, in the ensigns armorial of his family, the titles of patriot and merchant, when he is animated by the noble purpose of rescuing his country from a state of commercial dependence, as degrading to her character as it is injurious to her prosperity?

Every political community should endeavor to unite within itself, and have under its own control, as far as circumstances will permit, all the elements of national wealth. The wealth of the staple-growing states is derived almost exclusively from agricultural productions, which find their market principally in foreign countries. It is the demand of that market chiefly which gives them their value, and from that market we obtain most of the various commodities required for our consumption.

Foreign commerce, therefore, is an element of our wealth scarcely less essential than agriculture itself. Is it, then, compatible with that self-praised independence which should belong to every free state, to entrust the almost exclusive agency of conducting this great national interest to the citizens of other and distant states, who do not reside among us, and who so far from having any sympathies for us, constrain us to believe that many of them are deeply prejudiced against our civil institutions? We beg you, fellow-citizens, to give to this view of the subject that grave and deliberate consideration which it so obviously demands. We speak more from the records of our own sad experience than from the speculations of theory, when we express the opinion, that the commercial independence we are now

seeking to establish is indispensable to the preservation of our political independence. Can it be believed that the enormous and oppressive impositions of the protective system would have been so long and patiently borne, if our own proper commerce had been carried on through our own cities, and by our own merchants? If these had exported our agricultural staples, and imported the manufactures for which they were exchanged, would a doubt ever have been entertained that the high duties imposed upon those manufactures, with an explicit view to their prohibition, was a burden specifically laid upon the productions of our industry, taking just so much from their value, compared with the value of the similar and rival productions of other countries? Would the people of the southern and southwestern states have submitted, in 1832, to the levy of 24 millions of federal revenue from sixty millions of their imports, to be carried off and disbursed in distant communities, making "our barrenness an inventory to particularize their abundance!"

Yet all this, and more, did we patiently endure for years; many of us, owing to the confusion of ideas, resulting from the disjointed condition of our foreign commerce, doubting whether the burthen was not a benefit conferred upon us by a parental government. Let this fatal separation of our agriculture and our commerce, and the unnatural alliance which has been productive of such pernicious fruits, exist no longer. "It cannot come to good."

We ought never to forget, what we have too many painful proofs that others will not, that we are distinguished from our northern confederates by peculiar domestic and civil institutions, which are inseparably identified with our great staple productions, and which we hold to be absolutely exempt from all foreign scrutiny or interference whatever. And however we may deprecate the event of a dismemberment of our confederacy, we cannot be blind to the existence of causes which make it one of the possible contingencies for which it is the part of wisdom to provide. In such an event, our foreign commerce, as now carried on, would be thrown into utter derangement. This commerce, as well as our agriculture, should be carried on by those who have an interest in the preservation of our institutions, and who, in case of a political convulsion, would seek no distant refuge or separate destiny.

Having now briefly shown the extent of our loss by the indirect course of our foreign trade, our great natural advantages for reclaiming that trade, and the strong motives by which we are invoked to enter upon the good work without faltering and without delay, we now propose to consider the obstacles, real or supposed, that stand in

our way, and the means of overcoming them. The principal of these is the alleged want of capital. We have already shown that we have, in our great staples, the whole of the actual capital which sustains our foreign commerce. But this capital belongs to the planter, and the want of capital alluded to, is the money capital necessary to purchase the cotton, convert it into foreign goods, and distribute these to the retail merchants.

We are strongly inclined to the opinion that it is principally by the agency of credit, instead of money capital, and that credit resting upon our staples, that this branch of commerce has been hitherto carried on by northern merchants. So far as credit is to be used as an agent in conducting it—and we believe it is one of the most legitimate purposes of a well-regulated system of credit—it cannot be doubted that our own merchants have decided advantages over those of the North. They are nearer to the great fund by which that credit is to be ultimately redeemed, and can more easily avail themselves of the use of it. But to prevent misapprehension, we deem this the proper place to explain our views on the subject of credit, and the extent to which it can be safely and legitimately used as a cheap substitute for money.

Credit we regard as the legitimate offspring of commerce and free institutions, and a most active and salutary agent in the production of national and individual wealth. Far from being demoralizing in its tendency, it is pre-eminently the reverse, as it essentially implies mutual and extended confidence, founded upon general, known and established habits of honesty and punctuality. It can exist only in an atmosphere composed of such elements. But though we deem thus highly of credit, paradoxical as it may seem at the first view, we regard debt, in itself, as being very far from a benefit, and in the extent to which it is habitually carried in our country, a very great, and sometimes a demoralizing evil. That credit which is merely the correlative of indebtedness, is not the credit of which we have spoken. To illustrate our meaning, we could not select a case more strikingly appropriate than that of the foreign commerce now under discussion. We annually export, for example, to Europe, agricultural staples to the amount of eighty millions, and import merchandise to the same or a corresponding amount. If this were a transaction between two individuals, or even between two governments, it is obvious that no money would be required to effect the exchange, however numerous might be the separate sales and purchases into which it might be subdivided. If the European, for example, would purchase cotton to the amount of a million to-day it would be certain that the American would have occasion to

purchase that amount of merchandise to-morrow; and, instead of keeping a dead capital in money, to pay backward and forward through the extended operations of the whole year, they would make use of mutual credits, either in the form of conventional tokens, or entries upon their respective books. This would be an example of credit in its most safe and salutary form; at the same time performing the functions of money, and avoiding the evils of debt. And even as this commerce is actually carried on by the separate operations of unconnected individuals, bills of exchange, under a well-regulated system of mutual credits, might be made to perform the same function, to a much greater extent than it has been hitherto done. This branch of credit rests upon the solid foundation of property, and it can scarcely be doubted that importing merchants, residing in the staple-growing states, could organize a much more perfect system with the manufacturers of Europe, than any that has heretofore existed. They have great advantages over the northern merchants in this respect. They are nearer to the consumers, know better the extent and nature of their wants, and can supply them by a more rapid operation, involving less delay, and requiring shorter credits from abroad. Short credits and quick returns, making a small capital, by frequent operations and moderate profits, answer the purpose of a large one moving more slowly, will be the true policy of our importing merchants. For such a system, our means of internal communication, unobstructed at all seasons, and consisting, to a great and rapidly increasing extent, of railroads, will afford facilities unknown to any other portion of the United States. But to enable our importing merchants to introduce this system of short credits in their foreign transactions, the co-operation of our planters and consumers is indispensable. A radical change must be made in their system of economy. Their habit of laying out their incomes before they get them, and requiring a credit in all their dealing for the year, till the close of it, or until they sell their crops, even if it be longer, is the root of the evil of our whole system of credit. It must be eradicated if we would produce a great and salutary reform in our commerce and credit. If the planters require a long credit, the merchants, wholesale and retail, through whom they were supplied, would at least require an equally long credit, so far as they purchase upon credit. A large money capital becomes thus necessary for the importing merchants, that a long credit may be extended to the planters, who, so far from really requiring credit, own the whole capital which pays for our entire annual importations! This is a complete inversion of the natural order of things. The planters producing

and possessing that which constitutes almost the whole of our annual wealth, and having the means of giving credit to every other class, require credit of all others! How does this happen? The answer is easy. There is no mystery about it. It results from starting at the wrong point and expending every year the proceeds of the coming crop, instead of the crop already made. If every planter would adopt the system of expending, in the current year, the income of the year preceding, and of making all his purchases for cash, instead of on credit, he would most palpably promote his own interest, and individually contribute his part to a general reform of the most vital importance to the whole country. Highly as we estimate credit, in the operations of commerce, we believe it may be affirmed as a general truth, that debt is a most consuming moth to the planting interest. What practical planter can doubt, that for the credits annually obtained by himself or his neighbors, at the sales of the estates of deceased persons, and in various other modes, he pays from 15 to 20 per cent. more than the same property would cost if purchased with cash in hand. Let the suggested change in our economy, then, be no longer delayed. Every planter who adopts it will at once perceive its salutary effects upon his own comfort, independence and prosperity; and he will have the consolation of reflecting that he is at the same time performing the duty of a patriotic citizen. We confidently believe it would dispense with one-half of the capital that would otherwise be necessary for carrying on our foreign commerce by a system of direct importation.

But whatever may be the agency of a well-regulated credit, in bringing about the proposed reform in our foreign commerce, a very considerable money capital will nevertheless be indispensable to its complete accomplishment. Nor can it be doubted that the staple-growing states have the most abundant resources for supplying this description of capital, if the planters, who are our principal capitalists, can be induced to abandon the suicidal course they have heretofore pursued, of devoting their whole income (generally by anticipation) to the purchase of negroes to produce more cotton, and appropriate even a moderate portion of it to aid in the accomplishment of this great enterprise. If every planter would take a dispassionate and comprehensive view of his own individual interest, he would perceive that the blind instinct of accumulation which prompts him to make the crop of one year the means of increasing that of the next is the most fatal policy he could pursue. It is a system which, in the very nature of things, must inevitably defeat its own purposes. It will hardly be stating the case too strongly, to say that at

least one-half of the incomes thus devoted to the increased production of cotton are devoted to over production, and that they are consequently appropriated, not for the benefit of the cotton-planters themselves, but for that of the foreign and domestic consumers of their great staple. The principle of political economy laid down in the report of the select committee, and from which this conclusion is deduced, was known to practical men long before it was promulgated by any writer on the theory of wealth. It is founded upon the universal experience of mankind. If the supply of any article materially exceeds the effective demand, a competition is created among the sellers, which depresses the price greatly beyond a due proportion to the excess in quantity. In like manner a deficient supply creates a competition among the buyers, which increases the price in a corresponding degree. So general is this principle, that we may safely affirm that in any probable state of the demand for cotton, a small crop, if not extremely small, will produce a larger aggregate income to the cotton-planting states than a large one. Between the extreme points where high prices check consumption on the one hand, and low prices check production on the other, there is a wide range for the operation of this principle. There is no class of producers so likely to suffer from over production as the cotton-planters. Widely dispersed over an immense territory, without the means of consultation or concert among themselves, they cannot prevent the habitual occurrence of excessive crops, unless they adopt a *system* which will of itself have a constant tendency to prevent it. The basis of that system should be the investment of at least a fair proportion of their net annual income in some other profitable pursuit, instead of investing it in land and negroes; and we believe that there is no such pursuit that promises a more abundant reward to industry and enterprise than the direct importation of foreign merchandise through our southern seaports. Where, for example, a man of known integrity, capacity and industry, with a moderate capital, shall be engaged or disposed to engage in the business of foreign importations, what more public-spirited and profitable appropriation can a planter make of a portion of his surplus capital than to invest it in this importing concern, as a limited co-partner, under the wise enactments recently adopted in several of the staple-growing states?

One-half of the net income of the cotton-planters, thus applied for a few years only, would furnish abundant capital for conducting our whole foreign commerce.

May we not confidently anticipate, therefore, that the planters who are so deeply interested in the results of the great commercial reform we are attempting to effect, and whose co-operation is so indispensable to success, will put their shoulders to the wheel

at once, with a firm resolution to contribute every aid that may be required for the accomplishment of so glorious an enterprise?

Taking it for granted that all the difficulty anticipated on this score will vanish before the public-spirited enterprise of our capitalists, we look forward with hopes equally sanguine, to the removal of the existing obstructions to the intercourse between our importing cities and the vast interior which they are destined to supply with the manufactures of foreign countries. In this view of the subject, too high an estimate can scarcely be placed upon a rail-road communication between the Southern Atlantic cities and the navigable waters of the West. The most high-wrought visions of enthusiasm will, we doubt not, be found, in the rapid progress of events, to sink down into insignificance, when compared with the splendid realities which time will soon develop; and we confidently anticipate that ten years hence history will exhibit to us results which the most excited imagination would not now venture to predict. This magnificent scheme of internal communication will give us the command of the whole valley of the Mississippi, in spite of the established ascendancy of the northern cities, in the business of foreign importations and internal commerce. For whether we *scale* the interposing mountain barriers, like Hannibal, or *turn* them like his more skilful successor and rival, the *line of operations* which will carry us to the centre of this immense theatre of commercial competition, will be but half as long as that of our northern rivals; and, what is next in importance, will be at all times unobstructed, while theirs will be closed up for several months annually, by the freezing of their rivers and canals. And though we may neither defeat the Romans in successive battles, nor drive the Austrians out of Italy by annihilating successive armies, we shall perform an achievement more glorious than either that of Hannibal or Napoleon, while we conquer and bless, by the peaceful weapons of industry and enterprise, plains incomparably more rich and extensive than those which they overran and desolated by the destructive weapons of war.

It is impossible for any enlightened and patriotic citizen of the southern states to contemplate, without enthusiasm, the beneficial effects which will be produced on our commercial, social and political relations, by opening a direct communication with the great valley of the Mississippi. It will form an indissoluble bond of union between communities whose interests are closely interwoven, and will give a tenfold activity to a commerce which even the Alleghany heights have not been able altogether to prevent. The commercial cities of the south Atlantic and of the Gulf of Mexico are undoubtedly the natural marts of the western people for obtaining their supplies of foreign merchandise. It is there they find a market for the

principal part of their own staple productions, even now, when they obtain their supplies of foreign merchandise from the northern cities, by a complicated and expensive operation, and by a long and tedious transportation. How decidedly it would be to their interest to obtain, by a direct exchange, their foreign merchandise from the communities where they sell their domestic productions, avoiding all the expense and delay, and hazard of purchasing bills on the North! And how great and overwhelming will be the preference due to this direct intercourse of exchanges, when the transportation of their merchandise shall be but half in point of distance, and one-sixth in point of time? Every merchant who understands experimentally the importance of time in the transportation of his merchandise, will at once perceive the decisive advantage which this circumstance alone will give to our southern cities over their northern competitors. We, therefore, regard the completion of the line of communication, to which we have alluded, as a principal and most efficient means of establishing a system of direct importations through our southern cities, and breaking the shackles of our commercial dependence. When it shall be completed, the commerce of foreign countries on the one hand, and of the great West on the other, will seek our southern importing cities, by a direct line of communication, so cheap and expeditious, that both parties will find it their interest to meet there and effect their various exchanges. This great work, though itself an artificial structure, will be the means of throwing commerce into its natural channels. Entertaining these views, we cannot but strenuously urge it upon our fellow-citizens, and the political authorities of our respective states, to give every practicable aid toward its accomplishment, and that of the lateral communications which may be necessary to render its benefits more diffusive. Let us act not only efficiently, but promptly. We must seize the propitious occasion now presented to us, lest it pass away and never return.

The practicability of this railroad communication is no longer doubtful. Indeed, it may be said that it is nearly half completed by one route, and will be more than half completed when the railroad shall have been extended, as it soon will be, from Augusta to Madison, in Georgia. Connecting this with the Charleston and Hamburg railroad, we shall have more than 240 miles of continuous railroad on a direct line to the navigable waters of the Tennessee, and conducting us to a point not more than 200 miles distant from those waters. On this subject we cannot be too deeply impressed with the necessity of sacrificing local predilections to the common good. Let that line be adopted which shall be the shortest, cheapest and best, with-

out the slightest regard to those conflicts of local interest, which are, at best, comparatively unimportant, and perhaps purely imaginary. The great benefit which our whole interior is to derive from a direct trade, both with foreign countries and the western states, must be reflected from our importing cities. If it causes these to grow and flourish, the whole interior, within the sphere of circulation, will participate in their prosperity, by a law which is as certain in its operation, as that which causes the blood of the animal system to flow from the heart to the extremities.

Such, fellow-citizens, are the views by which we have been actuated in calling your attention to the grave and important subject of this address. It was not to have been anticipated that the purposes we so distinctly expressed through the report of our Select Committee would be so greatly misapprehended as they have been by some of our fellow-citizens. Surely we may claim the privilege, and urge the expediency of carrying on our own commerce, with foreign nations, directly through our own cities, and by our own merchants, without justly incurring the imputation of hostility to the northern states of this confederacy. We are not aware that they have any prescriptive right to act for us, any more than they have to think for us. It is no hostility to their interests, but regard to our own, by which we are animated. "It is not that we love Cæsar less, but that we love Rome more." We are certainly as anxious to encourage, upon principles of reciprocity, a direct trade with the northern states, as with any other portion of the world. Free trade with all the world, untrammelled by legislative restrictions, is the motto inscribed on our banner. We know neither friendship nor hostility in trade. Wherever we can sell highest and buy cheapest, that is our market; making no distinction between "Trojan and Tyrian." But we are opposed to an absorbing centralism in commerce, as well as in government. Our recent experience has but too impressively admonished us of the fatal revulsions to which it is calculated to expose us. We have seen a pecuniary pressure in the city of New-York throw the whole country into embarrassment, and its currency and exchanges into the utmost confusion and derangement; whereas, if the commerce of the United States, external and internal, had been fairly distributed through its natural channels, scarcely a shock would have been felt by the great body of the people. This view of the subject causes us to regret that the extensive trade we carry on with the manufacturing states of the north, exchanging our raw cotton for their various manufactures—a trade highly important to both parties—is not carried on directly between the cities of

the planting and manufacturing states, but like our foreign commerce, indirectly through the city of New-York. Almost the whole of our immense exchanges centre there; forcing thither, as it were, upon the heart, by something like a congestive process, the circulation of a system so vast, that it cannot be regularly and uniformly thrown out through the natural channels to the distant extremities. Periodical disorders and convulsions are the unavoidable consequence of such an unnatural and unhealthy condition of our commerce; and without pretending to speak for other portions of the Union, we confidently affirm that the people of the southern and south-western states are invoked, by considerations of the most enlarged patriotism, as well as of an enlightened self-interest, to apply a speedy and effectual remedy. The means of achieving our commercial independence are abundant, and all the auspices are eminently encouraging. Let us embark in the enterprise with a spirit and resolution commensurate with its importance, and a splendid future will be the result and the reward of our labors.

We have recommended, by a resolution unanimously adopted, that a convention be held in the city of Augusta, on the first Monday in April next, to devise farther measures of concert and co-operation in this great undertaking. We trust and confidently anticipate that the people will meet forthwith in their primary assemblies, to select delegates to that convention, and that all the states interested will be fully represented. May Heaven smile upon their deliberations.

SOUTHERN COMMERCIAL CONVENTION.—REPORT BY F. ELMORE.—The committee of ten, to which has been referred the resolution of the Convention, directing them to ascertain and report whether goods have not been imported and sold at the southern sea-ports, upon as good terms, and at as fair rates, as they can be procured at the northern—and whether the country merchants cannot now procure at the southern seaports as full a supply and as good assortments, upon as fair terms, and as favorable periods of payment, as they can be procured elsewhere—and whether there exist any and what advantages in making purchases from the direct importers at the South, respectfully fully submit the following report:

The inquiries to be made, in the foregoing resolution, are deeply interesting to all the friends of southern direct trade. If facts will justify affirmative answers to them, the success of the enterprise, if persevered in, is unquestionable, unless defeated by the untoward action of the General Government, or a dispensation of Providence against which human prudence affords no safeguard. The facts necessary to entirely correct conclu-

sions on these inquiries, are many, and exceedingly complicated, requiring for their collection, consideration and arrangement, more time and opportunities than the present occasion affords; and your committee being composed of merchants, dealers, and planters, from the interior of the states and territory represented in this convention, labor under many difficulties, in the investigation, in the result of which, the committee, in common with all they represent, have a deep interest, being nothing less than the discovery of those markets where they can sell their staples for the highest, and buy the goods they consume at the lowest prices. Such time and opportunities as they possessed have been employed to the best of their ability, and they submit the result to the consideration of the convention.

The southern states have at all times been the producers of staples of great richness and value in the commerce of the world, which from their earliest settlement as colonies, gave them a direct trade with foreign nations, of an extent and importance greatly beyond their proportionate population. The growth and increase of this trade kept more than even pace with the increase of population, and enriched them with a prosperity before unparalleled. Since the Revolution, and during the period of free trade, it grew and expanded to an immense extent, as has been developed in the report of the committee of twenty-one already submitted to the convention. The settlement of new states south-west and west, of similar pursuits, institutions and staples, have swelled the products of their industry, until they are more than three-fourths of the domestic exports, and constitute to that extent the basis of all the foreign commerce of the United States.

The fiscal action of the general government in the collections and disbursements of its revenue, has always been unfavorable to southern commerce, and when the additional burden of the protective system was thrown upon the industry and trade of the planting states, the disastrous effects were apparent in the deserted cities and ruined prospects which blighted the prosperity and broke the spirits of her people. The direct trade which was her own by every law of commerce and of nature, and which should have grown and increased every year, grew less and less, until it almost disappeared, being by this unpropitious policy transferred to the northern ports and people. Discouraged by these burdens, our capital sought more propitious locations for its employment, or engaged in other business—our merchants and capitalists removing to the northern ports with their funds, or withdrawing from commerce and investing in other employments; while others, discouraged by their example, were not found to supply their

places and attempt the business they had been forced to abandon. The importing merchants of the South became an almost extinct race; and her direct trade, once so great, flourishing and rich, dwindled down to insignificance.

It would seem to be undeniable that if the same state of things by which these disastrous blows were dealt with such fatal effect upon our direct trade continues to exist, the South cannot recover what it lost under their operation. It becomes therefore an important point to be determined whether any and what changes or modifications of these circumstances have taken place, which will enable the South again to enter into a struggle for her own direct trade with foreign nations, with any reasonable hope or fair prospect of success.

That such changes have for several years been in progress is most certain—slowly and gradually, but certainly and beneficially. The compromise act has already produced great amelioration, and every biennial reduction is an impulse to enterprise and trade, which has already caused much capital to return, and again filled the old channel with something like its ancient currents of business. The legislatures of the planting states have, with prudent forecast, availed themselves of the opportunity, and by wise legislation done much to encourage enterprise, and aid individual efforts in the patriotic effort; and it is hoped will yet do much more for this great and vital measure, by lightening the remaining burthens which oppress commercial capital in the heavy taxation on its employment. Lightened of much of that oppressive taxation imposed by the national legislation, and animated by the prospect of still farther reductions, and a well-founded confidence in the fostering care of the state legislatures, the race of importing merchants has revived, and, as individual and partnership firms, reappeared in our cities, and have embarked large capitals with great spirit in the business. It gives the committee great pleasure to add, that they have every reason to believe, that their operations have been conducted with the energy and prudence which deserves and has been crowned with success as advantageous to them as it is beneficial to the country.

If we consider the general principles which naturally regulate trade, we see no reason why foreign goods used in southern consumption could not be bought by our own merchants at the place of their production, and brought directly to our markets as cheaply as they can be taken to the northern markets by their merchants. A careful comparison of all the elements of cost, could they be clearly ascertained, might enable the committee to arrive at exact conclusions; but it is impossible for the committee, in the time

permitted for the inquiry, to attain such certainty in the multitude of circumstances which must be considered; and even were it possible in any given state of things, and at any fixed day, the constant changes of circumstances, the fluctuations of markets, and the thousand occurrences every hour arising to disturb the regularity of trade, the exchanges and the money market would, perhaps the very next day, vary that statement, and present another condition of things; and so also if all the foreign goods brought into the country for its consumption were imported by regular importing merchants more certainly might be attainable. It happens, however, so far from this being the case, that immense amounts of foreign goods are often poured into the United States, upon the great points of importation, under circumstances of commercial pressure and distress, producing great disturbance and fluctuation of prices. At such periods, the manufacturers, if pressed for money, instead of at once reducing the price of goods at their warehouses, (which is considered the last thing to be done,) generally prefer to make sacrifices of their surplus stocks at distant points. They sometimes ship to foreign ports, and sell by their own agents, on their own account, in which case they can lessen the duties by making out their invoices at lower rates, and also escape the addition which is put on the merchant by our revenue laws for the expenses on the invoice, being about five per cent. They sometimes make loans from mercantile houses having branches in other countries, and deposit their surplus goods as security, upon the agreement that they are to be sold for whatever they will bring, to refund the advance, if they are not paid when due. Great quantities of these goods, and also of failing merchants, are thrown upon the northern markets, especially New-York, and sold at auction for whatever they will bring. Great sacrifices are inevitable, and, at such times, purchases may be made at prices which would prove ruinous to the regular importing merchant, whether northern or southern. Such instances should be considered as departures from regular trade, and as exceptions to its general, regular and steady course. Although they occasionally not merely influence, but control business and prices, such transactions are not fair examples for regular business; and whether they are beneficial, in the long run, to the trade and prosperity of a place, may well be doubted, as their tendency is to disturb commerce, and destroy the regular importing merchant.

Before proceeding more into detail, it will be proper to remark, that the report will be confined, after a few remarks on domestic goods, to those of foreign fabric and importation. The consumption of domestic goods has increased greatly, and is still increasing. It is generally estimated by the merchant to ex-

tend already to 33 per cent. of the whole consumption. That they can be bought upon better terms where they are manufactured than at the southern ports, is generally conceded, except where the manufacturers have agencies at the southern ports, and sell at manufacturer's prices, including freight, insurance, &c. This, to a limited extent, is done, and may, and probably will in the course of time, be done to an extent commensurate with the demands of consumption. But if the southern merchant still goes to the northern manufacturer, and buys and brings the goods back with him for sale, it is not the less a direct trade, and he can buy as cheap, and, with the exception of the manufacturer himself, sell as low as any other competitor.

It is manifest, that the merchant who buys his goods cheapest, and has fewest burthens and expenses upon his business, ought to be able to sell his goods at the lowest prices. It is fair to presume, that what can be done, has been and will be done by our merchants, in fair competition, for the regular trade with their northern brothers. Let us see what are the elements which enter into the solution of the problem—which enjoys the greatest advantages in this honorable rivalry?

In carrying out this comparison, it will be most satisfactory to select places which may be considered fair exponents of the two sections of the Union, and the committee therefore select New-York for the North, and Charleston for the South. In selecting Charleston, the committee are influenced by the fact, that, being there now, they are enabled to procure more information, authentic and at first hand, as to it, than of any other southern importing city; but it is believed that the same general principles and facts applicable to its trade, may, with such modifications as will readily suggest themselves in each case, be applied to the other southern importing cities respectively.

In the South the ports are good and safe, and open all the year to ships. In the North, many and considerable obstructions exist during a part of it from cold and ice. The same may be said of their internal communications, the rivers and canals of the North being frozen, and the rail-roads obstructed by snows, and often for a considerable period of time. In the summer the southern ports are not so healthy, and their intercourse with the interior markets is less in amount and activity. The establishment of rail-roads, permitting the most rapid travel and perfect safety through the unhealthy districts adjacent, has greatly diminished the impediments of summer trade, especially with Charleston, and will, very soon, with other southern cities, to which similar improvements are extending. New-York enjoys great advantages from the perfect system of communication with foreign ports and her customers at home, her immense capital and custom, her

commercial connection with Europe, and most especially in the greater facilities her banks give her merchants for credits in Europe, and by discounts at home for long periods, and on their customers' notes. Were the only question, which city can sell its merchandise cheapest *in its own stores*, the answer would probably be, that New-York can generally sell as low or lower than Charleston. But the true question for the southern country merchant is, can he lay down his goods at his home cheaper from New-York than from Charleston, or any other southern port? If he buys lower in New-York, and the expenses of getting them home make them cost more than he could get them at from the southern port, his own interest as well as patriotism will influence him to deal at his own ports. In coming to a correct understanding of the cost of the goods at the two markets, we must look into the circumstances which create cost and go to fix the prices of merchandise;—all the expenses attending traffic must be charged in the profits and taken out of them, and consequently enhance the cost of its merchandise. These expenses, in some important respects, are believed to be greater in New-York than Charleston, and the following views are illustrative of this opinion: The foreign goods imported into this country are paid for chiefly by southern produce, or bills of exchange drawn on it. To buy this, the northern merchant must employ his factor or commission agent, and pay from 1 to 2 per cent. commissions;—the southern importer is on the spot where the produce is, and buys, in person, this produce or bills, saving that commission. In general, exchanges on Europe are lowered by 1 to 2 per cent. at the South. At present it is not so; but the general experience has been that way, and the present difference in favor of the North may be ascribed, in a considerable extent, to the great amount of American loans negotiated through New-York, creating a larger fund to draw on—a state of things temporary in character. House rents and store rents are believed to be twice or three times as high in New-York as they are in Charleston; clerks' wages are higher, and the expenses of families and living considerably greater. Another charge, which, it is believed, goes considerably to enhance the price of goods, grows out of the manner in which the mercantile business is done in New-York. The importer there, as a general rule, does not deal directly with the country merchant. He imports in bales and packages, which he does not break, but sells, in bales and packages, quantities too large for country merchants. The business is divided, also, into almost as many distinct classes of importers as there are distinct classes of goods. Assortments, in quantities to suit the dealer or country merchant, can only be had from another class of mer-

chants called jobbers. The jobbers, as they want for immediate retail, buy from the importers by the bale or package, and, breaking them, sell to the country dealers in quantities to suit their assortments. They are the regular customers of the importers; and if the importers sell to the country merchants, it is usually for cash, or on such rates and terms as will not interfere with the jobbers, who are their chief dependence, and necessary to their business. These transactions, although they assume many variations in the forms of business, may be illustrated as follows: The jobber buys of the importer, and gives his bankable note, payable at six or eight months, which can be converted at the banks to meet the importer's engagements—the jobber takes the country merchant's note, payable usually a short time before his note to the importer is due. The importer's profits are seldom as low as 10 per cent., often as high as 25, and may safely be averaged at 17½;—the profits of the jobber are estimated at the same, or perhaps a greater per cent., because he has to include the loss which he must submit to in converting the paper of the country merchant into available funds, amounting to about 4 per cent. on southern notes, which occurs in this way: If the note is offered for discount at a New-York bank, that sum is taken off the face of the note for discount, risk, expense of collection, and exchange; or if the southern merchant gives his note payable in New-York, the exchange, risk of remittance, and agency, will cost as much, and should be added to the cost of his goods. In Charleston, from 1 to 2 per cent. only is taken off, according to the distance the makers live from the city. In Charleston the country merchant deals directly with the importer, who combines in his business all that is done in New-York by both importer and jobber; his profits may be said to average from 20 to 33 per cent., greater than either of them singly, but probably not greater, if as great, as both combined. They have two establishments, and probably each his family to support, he only one. But, admitting that generally goods may be purchased lower, notwithstanding, in New-York, yet there are other items of calculation to be taken into the account.* The country merchant is sup-

posed to make his own selections in person. It will cost him considerably more, and take longer time both for him to go and return, and for his goods to be brought from New-York. The interest which occurs on his money while idle—the risks, insurance and cost of shipping to and landing at Charleston, and commissions on forwarding to him when landed at the several points of stoppage on the way to his home, are no inconsiderable elements of price to enhance the cost of the goods.

In one point of view, the committee believe that New-York possesses an advantage not adverted to above: in a wise policy which burthens her merchants with less state and corporation taxation than some of the southern states and cities impose. The committee could not procure exact information as to the particulars; but it is understood generally, that the port expenses, wharf fees, landing, &c., are considerably less. The taxes fall upon the sales only, are light, and paid by the purchaser, in fact. At the South, port expenses are greater. The states impose considerable taxes on stock in trade, while some of the cities aspiring to the import trade strangely discourage it by collecting a tax on every dollar's sale of merchandise made within their corporate limits—a tax both of the state and corporations, calculated upon returns required on oath, and which are in their nature inquisitorial, and repugnant to the merchant's feelings.

For the want of packets and shipping, much of the import trade of Charleston is made by her own merchants through New-York; the goods are bought by them in Europe, shipped in New-York packets to New-York—unloaded there, and reshipped to Charleston; in all such cases, there are increased expenses of commissions, insurance and freight on the voyage, and delay which is still more injurious; the goods therefore cost the importer more than similar goods coming direct to Charleston, but still are cheaper than he could buy them in New-York. Another and important consi-

Freight to Charleston, expenses, insurance, } loss on exchange, &c., at 5 per cent. }	8 70
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The cost of the goods to merchant landed in } Charleston..... }	182 83
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IN CHARLESTON.

Cost, duty off.....	\$100 00
Add duty paid by importer.....	23 50

\$123 50

Profits, including interest for 6 months, and } all charges, at 33 per cent..... }	41 17
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Sold to country merchants for.....	\$164 67
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Saved to Southern merchant by purchase in } Charleston, exclusive of expenses of tra- } velling to the North..... }	18 16
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* The following statement is made upon information furnished by experienced merchants.

IN NEW-YORK.

Cost of goods, duty off, say.....	\$100 00
Duty paid by importer.....	23 50

\$123 50

Profits of importer, 17½ per cent.....	21 61
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Sold to jobber for	\$145 11
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Profits of jobber at 20 per cent.....	29 02
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Sold to Southern merchant for	\$174 13
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\$182 83

deration is the credit which can be had in the two places. It has been already shown, that, as a general rule, the credits given to the country merchant in New-York, will average from six to eight months. In Charleston, during the past season, the credits given by the wholesale merchants have gone from six to twelve months, averaging perhaps nine or ten months. The medium of payments is not less important—payments in New-York are by bank notes at a discount, or exchange at a premium. In Charleston the committee are informed, that the bank notes of most of the southern states are taken at par, constituting a saving of from one to three per cent.

After weighing all statements and arguments submitted to the committee, they have come decidedly to the opinion that foreign goods may be imported into, and sold at the southern ports as cheaply and upon as good terms, as at the North; and perhaps it is not going too far to say, upon better—an extensive inquiry among them enables the committee to say, that such is the opinion generally entertained by the best-informed merchants. Acting upon this opinion, during the last season, they have made importations upon a scale greater than has been done in twenty years, and as the committee are informed, at rates that would allow their sales upon terms more favorable than the New-York market has afforded. Many instances were laid before the committee, illustrating the operation of the direct and circuitous importations on prices, from which the committee will select a few, coming from sources of the highest respectability, not as conclusive proofs that all the trade has been of a similar character, but as giving some data, by which the truth may be approximated. While it is conceded that the business of a single season, nor perhaps the cases cited are such proofs of the stability of the trade or its general character, as may be considered conclusive, yet when they come in support of the general principles upon which the committee have based their opinions, they cannot fail to have weight.

One of the committee, an experienced merchant, living more than one hundred miles in the interior of South Carolina, imported direct the whole of a considerable stock of goods, for the last and present year's sales. He visited New-York afterward, and examined the stocks and market carefully—he states, that the same kind of goods were as high or higher, than his would cost him, all expenses included, at his own store. One article especially was greatly more so, to wit, negro blankets—his standing him at his store in \$25 the piece, while for the same quality they demanded \$33 in New-York, a price he could have sold for at home, and realized 32 per cent. profit.

A firm in the city of Charleston lately imported a large supply of goods direct, and about the same time had an order filled for similar goods in New-York, which, they state to the committee, cost them full 15 per cent. higher than those imported direct. Among them was a case of cassimeres, a match case to one imported, the same in every respect, and costing near 30 per cent. higher than the imported case.

Another firm of this city, largely engaged in the wholesale trade, has a partner residing in New-York, by whom about one-third of their stock is purchased there, the balance being imported direct. They inform the committee, that the goods purchased in New-York have cost them from 15 to 20 per cent. higher than similar goods imported direct.

In regard to the assortments of goods now in the southern seaports, the committee are uninformed, except as to Charleston—in which city the supply has been greater than any had there for thirty years past, containing excellent assortments of foreign goods. Of domestics—the assortments, though better than heretofore, has not, it is understood, been either as varied or good as at the North. The great market of New-York must afford more range of selection at all times, but it may be questioned whether it affords a much greater variety of goods suited to the southern market, or of better staple. Most of the importing houses, during the past summer, had partners in Europe, who were well acquainted with the wants and tastes of the southern people, and made their selections to suit—and, notwithstanding the trade of the city has been far greater than was anticipated, they have still managed to keep their stocks at a respectable rate, and are now understood to have very good assortments. A strong proof, not only that the assortments have suited the demand, but that the rates have been better than could be obtained at the North, exists in the increased business; the sales of this season notwithstanding the epidemic of the last summer, are computed at 25 per cent. advance on those of the year preceeding. Many intelligent and enterprising dealers from the interior towns, villages, and country, who formerly traded to New-York, with a full knowledge of all the facts necessary to proper conclusions, have discontinued trading with New-York, and made their purchases here—and others, after persisting in going there, and purchasing, have returned here, examined the stocks, and regretted they had lost time and money by going. While greater activity has pervaded this market, a comparative stagnation has fallen upon that part of New-York which has heretofore participated largely in our trade. One firm, which has a house both in Charleston and New-York, sold on the capital employed the

past year full 75 per cent. more goods in the former than in the latter city. These are gratifying evidences that our trade is falling back in its ancient channels, and again returning to fertilize and re-people its ancient home.*

The last branch of the resolution directs the committee to inquire if any and what advantages exist in making purchases from the direct importer at the South. Many have been pointed out in the preceding pages of this report—others have been more ably and emphatically explained in the report submitted by the committee of twenty-one. There are some of these which may be adverted to presently—for the moment, however, others not yet mentioned will be remarked upon.

It is certainly good policy in the retail merchant to concentrate his dealings, if he can, at the same market, provided his supplies can be got there on as good terms. It has already been shown, that in Charleston the assortments are good, the supply ample, the terms fair, and the credits favorable. There are parts of the retailer's supplies which he can get nowhere so well as at the southern sea-ports—West India groceries for instance. By purchasing the other goods necessary for his business at the same market, he simplifies his business, contracts it to a single point nearer to him, and where he can avail himself of more means to meet his payments—all kinds of country produce may be taken by him from his customers, and made as available at the spot where he owes his debt, as money itself.

Another advantage results from it. His customers will buy more freely when the goods are fresh. That merchant does the best business whose goods best suit the wants and tastes of his customers; he need buy no more at a time than will meet ready sale—for, being near his market, he can in

a very short time get more goods of a given kind if needed—he thus makes a smaller capital do a large business, and runs little risk of sustaining losses by goods growing old on his hands and going out of fashion.

The committee of twenty-one have urged with great force a view in relation to this branch of the subject, which cannot be too highly estimated, to wit: the accumulations which result to the capital of the country, by keeping its own trade and the profits on it at home, increasing the means of the importer for enlarging his importations, and extending his credits and accommodations. The official reports from the Treasury give us some data on which to base a calculation, which may not be without its use. In 1834, 1835, 1836, 1837, and 1838, five years, the exports to foreign countries, of domestic produce, from Charleston, was by custom-house valuation, \$58,000,000, throwing off fractions. To this must be added for what was sent coastwise, perhaps 25 per cent. or 14,500,000, making in all, of domestic produce, \$75,500,000, or an average of \$14,500,000, by custom-house valuation. If the moderate rate of 10 per cent. be added, as their value in foreign or northern markets where they are sold, it will make an average annual amount of near \$16,000,000, which should have returned to Charleston, in the shape of goods and other supplies for the consumption of the country which furnished the exports. If from this amount two-fifths be taken for articles of domestic growth and manufacture, which we have received in exchange, there will remain upward of \$9,000,000 worth of goods consumed through Charleston, the importer's profits on which will not be less than 25 per cent. or two and a half millions annually. If its commerce were to remain stationary, and not increase for ten years to come, and we take this sum as the measure of profit, and admit that only one half of it or one and a quarter million of dollars, would be annually added to the importing capital, without calculating any profits on this addition, twelve and a half millions would in that period be added to the permanent resources of this most important class of our citizens. If the same principles of calculation are extended to the whole southern country, the benefits grow immensely upon the mind, prefiguring a career of prosperity which will add vast power and influence to the South, and give new guarantees for the stability of her institutions. The safety of investments and the certain profits in our trade, will offer, when known, inducements to the superabundant capital of other sections, and even of Europe itself, to seek a location among us in new mercantile firms, in partnerships or agencies of foreign houses, or loans to our own merchants. If a part only of these anticipations be realized,

* In one of the best New-York commercial papers, the Herald, of the 4th of May, inst., since the adjournment of the Convention, is the following paragraph of its commercial report. The confirmation it gives to this statement is perfect, as it estimates the falling off of Southern trade at 75 per cent. The insinuation that it is for want of credit to the Southern merchants, is undeserved, and will no doubt be duly appreciated by them.

† The Southern trade may now be said to be over for the spring. It has been exceedingly light, probably not more than one-fourth the amount from the same sections during the spring of 1836. This is particularly true of the hardware business, which trade has, however, received a great accession from other quarters, and the aggregate sales in this line will reach, without doubt, 50 per cent. more than last spring. In consequence of the difficulties with the Southern banks, and the continued high rate of exchange, many orders have not been expected from that quarter; goods are therefore scarce, a fact which leads us to anticipate a large fall trade from all quarters. Southern merchants are beginning to discover that prompt payments are, on the whole, the best policy. The question is now no longer with our merchant, is a man rich? but, is he prompt?"

advances will probably take place in the wealth, developments in the resources, and an invigorating influence be produced on the arts, the industry, enterprise of the country, in all the benefits of which, no class will participate more largely than the country merchants. In the improved condition of their customers, new wants will spring up and a greater demand for goods arise, at the same time that a better market will be created at home, to buy from them whatever of the staples or produce of the country they may have to sell; and larger stocks and wider ranges of goods will be offered for the selection of their assortments, at prices and credits more favorable as capital and competition increases.

SOUTHERN DIRECT TRADE TO THE CONTINENT OF EUROPE.—

When I first read in the newspapers of a meeting to be held in this place, to promote the interest of direct trade to the continent of Europe from the south of the United States, I considered it my duty to say a few words about it—it so happening that I was present here at the time.

You will excuse me, gentlemen, being a foreigner, thus to intrude upon your patience; but by giving you a short sketch of my life, you perhaps will think me competent to advise with you upon the important matter now before you.

Born and raised in the northern part of the kingdom of Hanover, on the River Ems, after being well schooled, I was educated a merchant in the cities of Bremen, Amsterdam, Hamburg and London, from my 16th to my 30th year. In 1820, I left London, and although until then only engaged in general commercial business, I was sixteen years dealer in timber and lumber in Emden on the Ems, and was English and Brazil Vice-Consul the while. In 1837, I formed a co-partnership with my brother in Amsterdam; in 1839 I returned to the timber trade, principally in America. Forty-five years in commercial business at large, and in colonial articles: as cotton, rice, sugar, &c., and during that time scarcely twelve months without visiting the large commercial cities of Europe, always an attentive merchant. This perhaps, will entitle me to your attention.

Your object, gentlemen, to make yourselves more independent of Liverpool, to save freight, and so many other charges by direct trade to Europe, avoiding northern ports, and incidental expenses, is reasonable and right. By direct trade you not only save great and unnecessary expense, but you also will receive in return European produce cheaper; emigration will be invited this way, and home ship-building and ships will be encouraged. Direct trade has long since ex-

isted between Bremen and Charleston, Wilmington, Savannah, Mobile, New-Orleans and Galveston; but it remains for you, gentlemen, by putting your own hands to the work, to extend and perfect good beginnings, and save to your own pockets and enterprise the fruits of your industry.

To obtain the advantages of direct trade with the continent of Europe, your attention has been particularly directed to the city of Amsterdam. Allow me to mention to you some of the advantages and some of the disadvantages regarding that trade, that you may the better judge for yourselves.

Amsterdam is a wealthy city; its merchants are eminent, and some of them rich; money is easy to be obtained from the Bank of Amsterdam at a low per cent. Amsterdam has communication by canals all through Holland. In about two years it will have a rail-road communication with Germany. By a branch of the Rhine it has communication with the German Rhine provinces, the most populous part of Germany. It is a market for cotton and rice, and imports largely of tobacco from Baltimore. All this is true; but again, while the wealth of Amsterdam is proverbial, it is with the merchant's wealth we are interested, and this is mostly employed in support of the society of commerce called in Dutch, "Handel Maatschappij," importing from Java, Sumatra, the Dutch East India colonies, China, &c., upwards of a million bales of coffee, 150 millions weight and more of sugar, spices of all kinds, Java indigo, Java tea, Java tobacco, rice and hides, and many articles from Japan—having a capital of seventy millions of florins. Two-thirds of these importations are sold to Germany; three millions of Hollanders do not consume it. Germany is at any time so largely indebted to Amsterdam and Rotterdam merchants, that it is a question whether these merchants, proverbially cautious, would advance very largely on any great amount of your produce.

The Amsterdam Bank will advance two-thirds of the amount of produce at the exchange market prices, but the merchant who takes such advance must be ready any day to refund, even if prices go down. This in many cases has proved fatal, because if he fails to comply, his stock will be sold to meet his liabilities, and most always at ruinous rates. There are circumstances sometimes present, under which the bank will not advance; but these are exceptions.

The inland communication by way of canal, is admirable. The most of them have their outlets at Amsterdam. This is a source of much wealth to this city. This trade does not extend beyond its frontiers, except, perhaps, on the side of Belgium, and is confined therefore to three millions of Hollanders.

The branch of the Rhine which makes Amsterdam's continuation with the German Rhine provinces, in the summer time between Arnheim and Utrecht, is often too dry even for small craft—in winter, ice prevents communication altogether. In such cases, nothing remains but to send the goods bound for Germany over Rotterdam, or by rail-road to Arnheim, to be forwarded thence on the Rhine.

A communication of the railway from Amsterdam to Arnheim, up to the Oberhausen, where the Cologne Minden Rail-road passes, has been lately agreed upon—this may be finished in two years; then, and not till then, will Amsterdam have a regular rail-road communication with the interior of Germany, which your interests will require.

The Dutch colonies hitherto produced no cotton, but they produce a vast deal of rice and tobacco, and other articles. These, imported from, and produced in the colonies, are free of all import duty, being considered as home products; the consequence is, that they can be sold cheaper than Carolina rice and American tobacco.

Probably the greatest incumbrance concerning trade with Holland, is the enormous charges freight vessels and ship-owners have to pay in entering her out-ports. Any vessel from Savannah will sooner sail at \$12 for two tons to Bremen, although 3 or 400 miles further, than for \$16 for the same to Amsterdam. I myself pay that difference—but who pays it? The importer from America, and lastly and really the planters. If your produce is imported into Holland in bond, you will have to pay those extra charges which the people in Hamburg and Bremen can avoid by getting the produce they want directly from your ports, which they do.

Your ship-owners have nothing to load back from Holland but gin and Java coffee. There are no emigrants. If your vessel wants them, they have to sail from Bremenhaven, as some of them have—if emigrants should go by Holland, they would go by Rotterdam, but they will be few.

Notwithstanding what I have said, Amsterdam is a proper place to ship some of your produce, but by no means make it your sole depot on the continent; in this you will find your error. Amsterdam has no regular steamers but two to Hamburg, and a few small ones to England; there are none to any port of the United States.

Another charge on shipping to Amsterdam is the necessity for vessels of 10 feet draft of water and upwards, to go through by the North Holland canal, which is very considerable; and in the winter this canal is closed; whereas the Weser, the river that leads to Bremen, up as far as Bremenhaven, never freezes.

The prosperity of a city and amount of trade going on, is often, and perhaps correctly judged by the increase of population. Now, then, after the peace in 1815, Amsterdam had 200,000 inhabitants, it has now about 212,000. Bremen had then 30,000, and it has now 60,000. In Amsterdam you scarcely ever see new buildings going up. Bremen has been built and re-built since 1815. Amsterdam is exactly as it was in that year; whereas, any one who knew Bremen in 1815, would hardly recognize it in 1851.

My opinion, therefore, is, that the larger proportion of your produce might be sent to Bremen with more advantage than anywhere else. Bremen has scarcely its equal in the perseverance and intrepidity of its eminent merchants. Before 1815, Bremen had very few vessels of her own; now she has two hundred, from 300 to 1400 tons; more than two-thirds of these trade to the United States, and some with South and Central America, the Brazils and the Pacific. There are three regular lines, of four vessels each, to New-Orleans; regular lines to New-York, Philadelphia, Baltimore, Charleston, Galveston, San Francisco, and other American ports. She exports more German emigrants than all the other ports put together.

In Bremenhaven, the harbor of Bremen, are docks large enough to admit your largest steamers, soon to be opened. I do not know the depth of water exactly on the bar of the Weser, but I once crossed it with a vessel of one thousand tons, drawing eighteen feet. The German fleet, frigates of war, are riding there in the harbor. The Washington and the Hermann, large class steamers, come and go regularly from New-York.

Ship-owners have very small charges to pay there—scarcely any worth speaking of in comparison with other ports. American and English vessels repair there for emigrants.

Your vessels at any time will load cheaper to Bremen, although four or five hundred miles further, than any port of Holland; labor is cheap there. The import duty is, I believe, only $\frac{1}{4}$ or $\frac{1}{2}$ per cent. on the value of all imported articles; and this is not levied by custom-house officers, but paid by the consignees at Bremen, upon their declaration on oath as Bremen citizens. It would not pay to have a lot of custom-house officers to collect so trifling a tax. Hence it is that you can buy wine, brandy, and quite a number of other articles, very near as cheap in Bremen as at the places where first sold. Bread-stuffs, meat, &c., are cheap, and labor cheap in consequence. If desired, I can furnish account sales and invoices of any article of export and import, which will demonstrate in favor of Bremen. The trade between the two ports of Amsterdam and Bremen and the

United States is vastly in favor of Bremen, and has been steadily on the increase since the European peace of 1815 ; in consequence, the merchants of Bremen know more of the trade you have in view, and understand rendering all facilities and advances. If your merchants and planters were to make Bremen the depot for your exports, that government would make itself a party, and extend every advantage and perfect every mutual understanding.

The advantage that Bremen holds over Amsterdam in its communication with the interior of Germany, claims your consideration. On the River Weser, a remarkable town called Munden, in the kingdom of Hanover, employs a number of steamers carrying merchandise up and down from Bremen, beside many land freight vehicles for the interior to such as choose to meet the higher charges ; but the principal communication is the rail-road, part of the great chain which interests in Hanover, unites Bremen with all Germany, France, Holland, Belgium, Switzerland, &c.

In four hours from Bremen the cars arrive in Hanover, where the rail-roads of all parts of Germany meet. In fifteen hours they are in Cologne, on the Rhine, which forms the communication with all the Rhine provinces ; with Switzerland, Belgium and France. in twelve hours ; in Berlin, the capital of Prussia, with 400,000 inhabitants ; in ten hours, in Leipzig, at the grand fairs ; in six hours, in Brunswick, another fair-market ; in eighteen hours, in Prague, the capital of Bohemia ; in thirty-six hours, in Vienna, the capital of all Austria ; and in fifty-four hours, in Trieste, on the Adriatic Sea. I may be mistaken a little in regard to time, but there cannot be much of error.

Tobacco and rice principally sold in Bremen, hitherto not a great deal of cotton, but at any rate more than in Amsterdam. My own house in Bremen has made large sales.

I have felt it my duty to compare commercially, the two cities of Amsterdam and Bremen, and leave you to judge ; and sincerely believe, that in the accomplishment of your great object, direct trade with the continent of Europe, Bremen presents the greatest advantages. Germany is the heart of Europe, and Bremen the most available port for economy of charges, dispatch and safety.—*Letter from a German Merchant.*

SOUTHERN FOREIGN COMMERCE.

—We have noticed with pleasure the advent of every new enterprise of genuine promise at the South. We have long believed that she has not made that judicious use of the talents entrusted to her care which her advantages afford, and which her necessities require. With a climate and soil the choicest of the earth, it should be the home,

not of hospitality only, but of industry, capital and power. A change has begun to come over the spirit of her dreams. The swaddling clothes of the infant are about being torn asunder, and a new being will stand erect conscious of its own power, and with the *toga virilis* of true dignity and strength. We congratulate the South upon her emancipation from the fetters of old usages and slumbering energies.

We have already spoken of the brilliant progress the South is making in the department of manufactures. Every paper we receive adds fresh evidences of the fact. The spirit of enterprise and progress which is rife in their midst, is not confined to one section, nor do the illustrations of its efficiency belong to one class of objects. The spirit of enterprise is eminently contagious. Activity begets activity, and energies well spent engender new elements of progress. This fact is fully corroborated by the simultaneousness with which the southern states have commenced their march of improvement. The erection of manufactories, the application of labor to capital in new forms, has called into requisition larger and more profitable systems of artificial intercommunication. Thus rail-roads and manufactures have gone hand in hand, increasing the necessities of the existence of each other, and contributing to their mutual success.

Next to the above two features of her industrial progress, we regard the attempt now being made to establish direct trade with Europe as freighted with the most incalculable advantages and enduring results. We would prefer not to see its success jeopardized by involving it with questions of sectional concern or political intrigue. Let it stand out by itself alone, towering high above all other interests. Let its consequences be calculated, and its influences measured. Let antagonistic feelings be compromised, and their united efforts will succeed in perfecting a great and magnificent work. The position which the South is fast acquiring demands it. The benefits which would accrue from its establishment would be immediate as well as lasting.

The great States of South Carolina, Georgia, Alabama, and Tennessee, bound together as they soon will be by their rail-roads, possess within themselves elements which will secure the accomplishment of almost any object. Their resources are exhaustless, and the results of their labor abundant. Already they supply the markets of the world with the great staple of cotton. The products of their fields will bring remunerative prices at all times, if sent to the proper markets. Heretofore they have been content to dispose of them in such a manner as they could without any

effort on their part. They have most usually passed through a long and irregular circuit in finding a market for consumption. Their cotton, their rice, and their sugar, which find their consumers on the continent, pass first to Savannah, or Mobile or New-Orleans; thence to New-York, or Boston, or Baltimore; thence to Liverpool, and from that great storehouse of the world, they are distributed throughout Europe. The process through which these valuable commodities are thus compelled to pass is unnatural and expensive. Three or four shipments are made when one at least would suffice. The reductions in commissions, insurances and freight which direct transportation would effect, would make these necessities not only cheaper to the consumer, but more profitable to the producer.

In the single article of cotton, the markets of the continent, which should be supplied *directly* from the southern ports, receive more than half the quantity consumed from Great Britain, which is annually held back in the monster warehouses of Liverpool. With immense capital upon which to operate, they guide and control the markets. They dictate terms not only to this country, but to the whole of Europe. The quantity supplied directly by the United States, and by Great Britain respectively for consumption on the continent, is thus summed up in bales:—

	Exports from United States	Exports from Great Britain
1846.....	205,000	194,000
1847.....	169,000	215,000
1848.....	255,000	192,000
1849.....	322,000	254,000
1850.....	194,000	282,000
1851.....	265,000	285,000

This should not be so. It is for the interest of both producer and consumer that they should be brought more closely and more directly together; they should understand and appreciate the wants of each other. In order to secure these important objects, such intermediate agents should be dispensed with. The markets of Great Britain, and her markets *alone* should be supplied directly from the southern ports. The markets of Germany, France, and the interior states of Europe, should receive their supply directly from Charleston, Savannah, or Mobile, as the case may be, in the ports of Amsterdam, Hamburg, Bremen, or Havre. Our own coasting trade would supply the markets of New-England and the Atlantic states generally.

Thus the influence of commerce would be more widely diffused, the articles of manufacture cheapened, and the processes of labor diversified. The interchange of commodities would be more common, and the comforts of life more widespread. The commercial cities of the South

would spring into new life, and diffuse some of the vigor of their growth into the sections adjacent. New avenues to wealth and enterprise would be continually unfolding themselves. Nor would these evidences of prosperity be regarded with jealousy by the cities of the North. They, too, would share in the general increase of trade. There would be a more equal distribution of power and capital and wealth. And as commerce is liberal in the influence which it exerts, and cosmopolitan in its nature, it would banish from all our minds sectional feelings and geographical distinctions. The closer we draw the links of trade among ourselves and with other nations, the more improbable do we render the chances of collision, and the mutual interchange of products will lead to a reciprocation of courtesies that will finally bind all nations in a common brotherhood.

SOUTH—COMMERCIAL RESOURCES OF, COMPARED WITH THE NORTH.—The agitation of the subject of slavery, which threatens to dissolve the Union, involves some very serious reflections, particularly to that portion of the community engaged in commerce and the inland trade between the North and the South.

A glance at some of our business streets exhibits the immense trade with the South and South-west, and we contemplate with satisfaction the importance and value of the South to the North.

It would be better if some of our legislators understood more thoroughly the statistics of trade between the North and South, and between the United States and foreign countries. They would be better enabled to estimate the consequences that would be sure to follow disunion, upon the value of every species of property at the North, and changing its location to the South.

Could these important points be seen by our public men at Washington, a better feeling would prevail, and less acrimony would show itself, in meeting the questions which now agitate the country.

The agricultural interests of the United States are paramount to all others, for upon this branch of industry commerce is supported and manufactures thrive. If we look at that section of the Union, which grows for export the largest in amount, and by far the most important commodity of any productions of this country, or of the world, we see that the South, where slave labor is employed, furnishes, in cotton alone, the whole Union with a large proportion of the means to pay for the imports from foreign countries.

The following table will show the value of such articles of agriculture, produced at the South, as will always command a foreign market, for the past three years, viz.:

	1849.	1848.	1847.
Cotton.....	\$95,250,000..	\$74,620,000..	\$72,905,000
Tobacco.....	6,616,741..	8,763,369..	11,008,200
Rice.....	3,841,964..	3,575,895..	3,091,215
Naval stores...	1,624,190..	1,864,319..	1,798,612

\$107,332,895. \$88,616,754. \$88,803,027

To the above may be add- ed sugar and molasses	18,417,500..	16,480,000..	22,746,430
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Total agricul- tural produc- tions of the slave states	\$125,750,395.	\$105,302,574.	\$111,559,457
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Of which there were exported to foreign countries, during the same period, derived from official returns, viz :

	1849.	1848.	1847.
Cotton.....	\$66,396,967..	\$61,998,294..	\$53,415,878
Tobacco.....	5,804,204..	7,551,122..	7,242,086
Rice.....	2,569,362..	2,331,824..	3,605,896
Naval stores...	845,161..	752,303..	759,221

\$75,615,700. \$72,633,543. \$65,023,051

It will be seen by the above tables, that not only did the South furnish the staples—amounting to \$75,615,700, in 1849—to pay for our imports, in part, to foreign countries, but reserved a large amount for domestic consumption. Every dollar of these exports from the South was the production of her own soil, and without which, our foreign trade would have been just so much more circumscribed.

It is well known that the North receives the great bulk of the importations from foreign countries ; that, without the means furnished to us in cotton, rice and tobacco, we should be without the elements for conducting, so profitably and to such an extent, foreign commerce. Without these staple productions of the South, we should be unable to buy, or, in other words, to pay for, the numerous articles of necessity and luxury that make up our catalogue of importations.

We annex the following tables to show the extent of the import trade, carried on almost exclusively by northern capital :

STATEMENT of the value of imports into the United States, for the last three years, designating the portion received at the North and the South :

	1849.	1848.	1847.
New-York...	\$92,736,497..	\$94,525,141..	\$84,167,352
Boston.....	26,327,874..	28,647,707..	34,477,008
Other ports...	14,716,030..	14,200,043..	11,161,667

Total North...\$133,780,361..\$137,372,891..\$129,806,027

New-Orleans.	8,077,910..	9,380,439..	9,222,969
Charleston..	1,310,591..	1,485,299..	1,580,658
Other ports...	4,658,577..	6,760,298..	5,934,978

Total South...\$14,077,078..\$17,626,036..\$16,738,605

From the above it is clearly shown, that the North acts as the great shopkeeper for the South. She employs us to take her productions, send them to foreign countries to be sold, and returned in iron, cloth, and other articles. Dissolve the Union, and she would

act as her own shopkeeper. She employs us, because we have ships and capital invested in commerce. Compel her to establish a southern confederacy, and she must act for herself. She can build her own vessels, fill them with the products of her own soil, and import her own goods, not from the North, but from those foreign countries who may buy her cotton, rice and tobacco.

This trade the North would lose. If we look at the wealth and splendor in our large northern cities, we see evidences of the profit derived from commerce and trade with the South. It is safe to estimate fifty per cent., after paying duties, upon the cost price of most of the articles imported into the United States, before they reach the consumer. Who gets this fifty per cent. ? It is divided between the commission merchant, ship-owner, importer, banker and the wholesale and retail dealer. All, except the latter, are identified with the institutions of the North—and who, in a body, realize, in profits out of this foreign trade, an amount equal to the whole value of the cotton crop.

What would be the consequences if the North were deprived of this immense inland trade with the South, by far the most important of any branch, connected as it is with their shipping and manufacturing interests ?

Destroy the intercourse between the North and the South, and one of the very first acts that would claim the attention of the South would be to engage in foreign commerce. They would not only do it, in preference to buying from the North, but would be compelled to take articles of foreign manufacture, in return for their cotton, rice, tobacco, &c., which the North would be shut out from, just to the extent the consumption of the free states would permit ; for it is not likely the South would allow the North to compete with her in the manufacture of coarse cotton goods, when they would have the ability of fixing an export duty on raw cotton to the free states, that would ensure a preference of their own manufactures in foreign markets, where northern fabrics have had the preference of the whole world. What a picture for the North to contemplate ? What articles of production, besides manufactured goods, would they be enabled to export, to carry on even a competition with the South in commerce ?

The following tables show the extent of the exports from the free states, for the last three years :

SUMMARY of the value of exports of such articles as were produced by the free states, or from abroad, by the capital of such as are identified with the interests of the free states, viz. :

	1849.	1848.	1847.
Fisheries	\$512,177..	\$718,797..	\$795,650
Oil and whalebone	1,876,074..	1,075,327..	2,480,716
Candles.....	159,403..	186,839..	191,467

	1849.	1848.	1847.
Skins, furs and ginseng.....	\$839,194..	\$770,427..	\$811,612
Lumber, and articles manufactured from wood...	3,718,033..	5,066,877..	3,806,341
Ashes.....	514,603..	466,477..	618,000
Provisions, estimated at.....	10,000,000..	8,800,000..	7,300,000
Breadstuffs, estimated at.....	10,000,000..	18,000,000..	42,000,000
Miscellaneous.....	1,800,000..	1,500,000..	1,200,000
	<hr/>	<hr/>	<hr/>
	\$28,420,484.	\$35,584,744.	\$59,203,986
Manufactured goods, estimated at.....	12,000,000..	11,000,000..	9,000,000
	<hr/>	<hr/>	<hr/>
	\$50,420,484.	\$48,584,744.	\$68,203,986

This table goes further to show the consequences that would result from disunion, than any other proof we could have adduced. It would not only be mortifying, but disastrous to all of the great interests the North has at stake, to have its foreign trade cut down from one hundred and fifty millions to fifty millions of dollars. How would such a state of things affect real estate in the cities of the North? What would be the effect in this city alone? Such a falling off in the commerce of New-York would at once be felt in every department of business. If the slave states are driven to a separation from the free states, the decline of the North, in her commercial ascendancy, may be dated from that event. It would require more space than we can allow here, to trace the ruin that would follow to commerce, trade, manufactures, and to credit generally. We, at the North, would have, besides a deranged currency at home, most of our own state and government securities, now owned in Europe, back upon our market, to absorb what ready capital we possessed, and which would be required, at such a crisis, to assist in establishing a new order of things; for it would be folly to suppose that we could go on and supply, for any length of time, the South with the manufactures of the North, upon the same terms as heretofore.

The tariff upon northern manufactures would be so framed as to give preference to those of Europe; consequently, one of the new changes would be the removal, to the South, of hosts of importers, many of whom are foreigners, and have particular predilection for the North over the South. They could as well conduct their business in Charleston or Savannah, as New-York or Philadelphia. Another change would be, the removal of numerous small manufacturers, and, in time, many large ones, too. It is impossible to depict the consequences of disunion upon the trade and commerce of the whole country; for it cannot be denied, that the South would at first suffer, but past experience shows that the North has everything to lose, while the South has but little to gain. We trust that, with these facts before the

whole commercial people of the United States, the North will not refuse to meet the subject, now agitating the whole length and breadth of the land, in such a liberal manner, as will permanently settle the great question at issue.—*N. Y. Courier and Enquirer.*

SOUTH AND THE NORTH.—The returns of the census, says the Southern Press, are vindicating the institutions of the South in the most triumphant manner. The following are a few items concerning Georgia:

POPULATION.

Whites.....	526,417
Blacks.....	382,294
	<hr/>
	908,711
Value of real and personal estate.....	\$334,660,217
Amount of state tax.....	\$328,247 18
“ county tax.....	170,803 53
	<hr/>
	\$499,050 53
Number of deaths for the year preceding	
1st June, 1850.....	9,099
The mortality of the whole population in 1849-50, was one in 91 1-2.	

The white population of Georgia is about one-sixth of that of the state of New-York. Yet Georgia has nearly half the property. Hence a white person in Georgia is on an average nearly three times as rich as one in New-York. Even if slaves are excluded from the property of Georgia, she is wealthier in proportion to white population than New-York. And then the health of Georgia is vastly superior. Out of a total population of 908,711, the deaths in a single year were 9,099. In the single city of New-York, with about half that population, they were about 18,000, or nearly double. Hence the average mortality of the city of New-York is four times as great as that of the state of Georgia.

The taxation of Georgia, state and county, is about half a million—that of New-York exceeds seven millions. Hence the taxation of Georgia, compared to that of New-York on the basis of population, is less than one-fourth, on the white basis is less than one-half—on the property basis is less than one-sixth! Yet with this overwhelming evidence of the superior social, political and financial condition of Georgia, she is excluded by New York from a common territory as immoral and unthrifty and—submits!

SOUTH—A MODE SUGGESTED OF CONVINCING THE NORTH ON THE SLAVE QUESTION.—“*Resolved*, That an association of our citizens, sound in the maintenance of southern principles, and devoted to the interests of the southern country, should be formed for the purpose of encouraging home industry in all its branches, and rendering the South independent of all individuals, and

corporations, and societies, inimical to her domestic policy.

"*Resolved*, That we purchase from the North nothing that can be obtained from the South.

"*Resolved*, That we reject, as far as lies in our power, the merchandise and produce of the northern states hostile to southern institutions. And for such merchandise as is indispensable, let it be bought from the southern merchant, who lives and dies in the South, rather than from the northerner, whose earnings here are sooner or later transferred to the North.

"*Resolved*, That we encourage southern industry, by ceasing, at once, the purchase of ready-made clothing coming from the North. This importation to Mobile of boots, shoes, shirts, coats, &c., &c., is a reproach and disgrace to us. Our own tailors, shoe-makers, dress-makers and seamstresses, are at least as skilful as those of any other land. Let them meet with the encouragement they deserve.

"*Resolved*, That we encourage southern agriculture, by giving preference to all produce cultivated in the southern states, viz.: by using southern flour, and not northern corn, instead of oats, and fodder instead of hay. That we drink no ale, porter or cider made in the North, but encourage the growth of southern hops and apples, and the establishment of southern breweries.

"*Resolved*, That we encourage southern manufacturers, by consuming their goods in preference to all others; and that we use every exertion to extend their number and variety. That we give every encouragement to the new paper mill, just going into operation near Mobile.

"*Resolved*, That we reduce the cost of foreign goods, by encouraging direct importations of all foreign merchandise, which we have until now imported through the North only. That foreign commercial houses favorable to southern interests and policy, be encouraged to establish branches and agencies among us, that our retail merchants may supply themselves at home, without the risk, trouble and expense, of importation from the North. The European markets would require a supply of our agricultural productions in exchange for their goods, in the ratio of our imports, thus giving vitality and stability to a direct trade. The cost of the goods would be so materially lessened as to make us independent of the North for them, and ultimately to destroy their manufacturing interests.

"*Resolved*, That in the distribution of public office, the people should invariably reject all candidates who are not identified with the southern population. The humblest office commands a certain influence; and the incumbent should not be suspected of northern prejudices.

"*Resolved*, That we cease our subscriptions to any newspaper, magazine or review, hostile to our land and institutions.

"*Resolved*, That professional men, and particularly ministers of the gospel and instructors of youth, born in the South, receive our patronage. We should beware of those who, under the garb of religion, poison the minds of the weak and the credulous. Still more should we beware of teachers who instill into the minds of our children principles averse to our institution.

"*Resolved*, That we should extend our colleges and other scholastic institutions by conferring on them new donations and privileges, exercising discrimination in the selection of professors and teachers, in order that we no longer have occasion to resort to northern institutions for the education of our sons and daughters, whose minds are likely to be there poisoned by denunciations and anathemas against their parents.

"*Resolved*, That we create and patronize an establishment for the publication of all elementary books of education.

"*Resolved*, That our summer excursions for health and enjoyment be to our lakes, our bays, to the Gulf of Mexico, to the borders of our southern Atlantic ocean, which contain places of resort combining all the varied advantages of sea-bathing, comfort and society, equal, if not superior, to those of northern watering-places. All the southern states abound in delightful mineral springs, to which the invalid and the man of leisure can repair for health and recreation.—*Alabama Paper*.

Col. Wigfall's Cure for the Crisis.—I would propose the following amendments to the Constitution of the United States:

1. Let it be declared that the third clause of the eighth section of the first article, which gives to Congress the power "to regulate commerce among the several states," shall never be construed to confer any power over the slave trade between the states.

2. Let it be declared that the sixteenth clause of the same section of the same article, which gives to Congress the power "to exercise exclusive legislation" over the District of Columbia and other places in the slave states, shall never be construed to confer any power over slavery in those places.

3. Let it be declared that the federal government shall have the power to acquire territory to belong to the states composing the Union, and that, when acquired, it shall be the duty of the government at once to subdivide it into territories of convenient size, designating the size, and establish over them territorial governments, with no provisions as to slavery, giving to the people of those territories the power of legislating for themselves upon all subjects except upon that of slavery, and allowing them, when

they have a sufficient number of inhabitants, citizens of the United States, to meet and form state governments, and be admitted into the Union upon equal terms with the original states.

4. Let it be declared that the first article of the amendments to the constitution, securing to the people the right "peaceably to assemble and petition the government for a redress of grievances," shall never be construed to allow Congress the privilege of receiving, discussing, referring or reporting, upon any petition upon the subject of slavery.

5. Let the fifth article be so amended as to place this compromise, between the slaveholding and non-slaveholding states, upon the same ground as that between the large and small states, in reference to their equal representation in the Senate, and prohibit any further amendment of the constitution upon the subject of slavery, except by the unanimous consent of all the states.

Could this exciting and dangerous question be once removed, I see no other rock upon which our glorious Union is likely to be wrecked. Can any one doubt, that, if the amendments I have proposed had been originally adopted as a part of the constitution, the difficulties and dangers to which our Union is now exposed would have been all avoided! How fortunate for our country would it have been, had they been substituted in 1820 for the Missouri compromise! But it is not yet too late "to form a more perfect union," and, by so doing, laugh to scorn the predictions of those who look to the dissolution of the Union of these states as evidence that man is incapable of self-government.

All that we ask, from our northern brethren, is peace for the present and security for the future. Surely they will not refuse us so reasonable a request. To suppose it possible, would argue but little faith in their fraternal affection. The security which would accrue to us by the ratification of these amendments, is already ours by any fair construction of the constitution. We ask no additional rights to those already granted to us, and seek, by these amendments, merely such a construction of the compromise originally entered into between the different states, as will, for the future, remove all doubt and prevent all discussion.

SOUTHERN WEALTH.—We take this from an admirable address delivered by Wm. E. Martin, on the celebration of the anniversary of Fort Moultrie. This address is so interesting in many particulars, that we shall hereafter have occasion to extract more largely from it:

"The cotton crop of the old world cannot be accurately estimated, for want of correct accounts of the

quantity consumed in India, and exported thence to China. We may, by approximation, however, arrive at a conclusion sufficient to illustrate our views. The quantity imported into the whole of Europe, from all parts of the world, during the years 1846, 1847, 1848,* and 1849, reached 11,502,000 bags of 300 lbs., which, at the average of prices for these years, 8½ cents,† was worth \$293,301,000. The production of cotton in the United States commenced in 1790, and in the next year only 81 bales were exported, and yet of 11,502,000 above stated, 8,922,000 went from the Southern states of America, which at the same price, (8½ cents,) is worth \$227,511,000. So that in quantity the production of the South is as 8,922,000 to 11,502,000, and the value is as \$227,511,000 to \$293,301,000, and thus we see that we produce more than three-fourths in quantity and value of this great staple. If the unascertained quantity consumed in India and exported thence to China, which is inferior in staple to ours, is set off against the quantity of our cotton consumed in the United States, (which I have not added to the computation,) the result, it is believed, will not be varied.

"Let us look at this question in another point of view. The crop of the United States in 1823, was only 509,158, and yet the crop of the year 1848-9 had reached 7,228,596, more than five times as great in 1848, as it was in 1823, twenty-six years before. This was worth, at last year's price, (10 cents,) 81,871,000. Deducting 518,039 as the quantity consumed in the United States,

We have for exportation, 2,227,844 bales,	
which at 10 cents, (a low estimate), is	
worth.....	\$66,825,320
If to this be added the other domestic	
productions of the South.....	32,674,176

The whole value for Southern exports	
for 1849, will be.....	\$99,500,000
More than two-thirds of the whole domestic	
exports from the United States for	
that year, which was.....	131,710,081
And more than three times as much as	
the whole domestic export from the	
North, for the same year, which was:	32,210,081

The remarkable fact is also shown that the domestic export of the South, *exclusive of cotton, her great staple*, is \$32,674,176, while all the exports from the North are \$32,210,081, leaving the value of her cotton over and above. The fact that the North consumes less than one-fifth of our cotton, while four-fifths find so ready a market on our wharves, is significant of the *independence of the South*; and the North might well be reminded, by her receiving *all her supplies of raw material from us*, and sending it again to us in her manufactured goods, (even if less keen-sighted than our Northerners are reputed to be,) how dangerous is the policy of converting an ally into an enemy, and a customer into a rival."

SOUTH — RESOURCES OF.—B. Boykin, Esq., of Mobile, delivered, not long since, an able address before the Southern Rights' Association of that city, in which occurs the following interesting passages:

"A disruption of the Union, carrying with it no little acerbity of feeling, would result in breaking up in a great measure the present system of internal trade—a trade which has made the North what it is, and which is the foundation of its wealth and prosperity. The following statistical facts will illustrate the immense loss to the North by the abandon-

* Compiled from tables of Collman and Stolterfoht.

† The average is made from reports to the Prussian government by the Consul at Charleston.

‡ Reports of Secretary of Treasury.

ment by the South of its connection with that section. They are worthy of the consideration of those who seek our overthrow, and by consequence their own ruin."

"*Direct Trade.*—The New-York Courier, in an article on the consequences of disunion, condenses some important commercial figures and facts. The product of the slave states it puts down as follows:

	1849.	1848.	1847.
Cotton.....	\$95,250,000..	\$74,620,000..	\$72,905,000
Tobacco.....	6,616,741..	8,756,360..	11,008,200
Rice.....	3,841,964..	3,575,895..	3,091,215
Naval stores..	1,624,190..	1,864,319..	1,638,612
	\$107,332,895..	\$88,816,574..	\$88,803,027
Sugar and molasses...	18,417,500..	16,486,000..	22,746,430
Total.....	\$125,750,395.	\$105,302,574.	\$111,549,457

"Of which, there were exported to foreign countries, during the same period, derived from official returns, viz:

	1849.	1848.	1847.
Cotton.....	\$66,396,967..	\$61,998,294..	\$53,415,878
Tobacco.....	5,804,207..	7,551,122..	7,242,086
Rice.....	2,569,362..	2,331,824..	3,605,896
Naval stores..	845,161..	752,303..	759,221
Total.....	\$73,615,700..	\$72,633,543..	\$65,023,051

"Here it is shown that the aggregate amount of the exports of southern industry made to foreign countries within three years, was \$212,273,294.

"How much of all this, does the reader suppose, was imported by the South? Why, as shown by our tables, only 43,441,719! The rest, \$164,835,575, went through the

hands of the North. How much was left in those hands, and how many hundreds of thousands of people in the South would this have maintained? How many cities would it have helped to build? How much would it have served to reduce the *per capita* amount of taxation which we pay to our states?

"Our tables show that within the three years above named, the value of the whole amount exported from the free states of materials of their own production, was \$167,209,214. That is, the South furnished to the exporting mercantile enterprise of the North within a fraction of as much as the whole of the exportable industry of that section.

"The total value of all the imports into the United States within the three years, is stated as follows:

	1849.	1848.	1847.
New-York...	\$92,736,497..	\$94,525,141..	\$84,167,352
Boston.....	26,327,874..	28,647,707..	34,477,008
Other Northern ports.....	14,716,030..	14,200,043..	11,161,667
Total North.	\$133,780,361.	\$137,373,891.	\$129,806,027
New-Orleans.	8,077,910..	9,380,439..	9,222,969
Charleston...	1,310,591..	1,485,299..	1,580,658
Other Southern ports.....	4,688,577..	6,760,298..	5,934,987
Total South....	\$14,077,078.	\$17,626,036.	\$16,738,605

"Here it will be seen that the aggregate value of all the imports into the North was \$400,959,279; while the total value of the imports into the South was only \$43,441,719! Yet, within this period, the South furnished of the exports, values to the amount of \$213,277,194!"

SOUTH—TONNAGE OF FREE AND SLAVE STATES.

The New-Orleans Bulletin condenses the following table from the Treasury Report on Commerce, 1851:

TONNAGE CLEARED FROM THE UNITED STATES FOR THE YEARS 1850 AND 1849.

States Free	Tonnage, 1850.			Tonnage, 1849.		
	American	Foreign	Aggregate	American	Foreign	Aggregate
Maine.....	111,123.....	91,014.....	202,137.....	127,368.....	66,081.....	193,449
New-Hampshire.....	682.....	7,531.....	8,213.....	1,023.....	5,819.....	6,842
Vermont.....	81,073.....	1,783.....	82,856.....	97,218.....	825.....	97,543
Massachusetts.....	272,278.....	274,674.....	546,752.....	280,167.....	244,067.....	524,254
Rhode Island.....	16,770.....	1,705.....	18,475.....	15,568.....	2,315.....	17,883
Connecticut.....	17,515.....	9,802.....	27,317.....	20,440.....	3,719.....	24,159
New-York.....	1,411,557.....	737,539.....	2,149,096.....	1,358,643.....	784,514.....	2,143,157
New-Jersey.....	150.....	961.....	1,131.....	—.....	428.....	428
Pennsylvania.....	81,276.....	30,342.....	111,618.....	93,322.....	27,005.....	120,327
Ohio.....	15,485.....	18,322.....	33,807.....	6,957.....	9,821.....	16,778
Michigan.....	7,982.....	46,719.....	54,701.....	33,919.....	90,605.....	124,524
Illinois.....	1,043.....	998.....	2,041.....	964.....	2,796.....	3,760
California.....	104,266.....	75,862.....	180,128.....	—.....	—.....	—
Total.....	2,121,100.....	1,297,362.....	3,418,382.....	2,045,609.....	1,247,495.....	2,293,104
Slave						
Delaware.....	—.....	—.....	—.....	1,091.....	1,599.....	2,690
Maryland.....	89,296.....	37,533.....	126,819.....	118,276.....	31,652.....	149,928
District of Columbia.....	1,520.....	200.....	1,720.....	2,320.....	—.....	2,320
Virginia.....	42,091.....	23,367.....	65,458.....	58,989.....	10,589.....	69,578
North Carolina.....	30,739.....	11,493.....	42,232.....	26,030.....	3,860.....	29,910
South Carolina.....	72,222.....	52,830.....	125,052.....	88,738.....	58,401.....	147,139
Georgia.....	21,039.....	51,524.....	72,563.....	31,150.....	53,713.....	84,863
Florida.....	10,022.....	12,154.....	22,156.....	20,507.....	10,922.....	3,429
Alabama.....	32,268.....	80,717.....	112,985.....	76,523.....	71,593.....	148,116
Louisiana.....	211,800.....	158,137.....	369,937.....	293,456.....	194,234.....	487,690
Texas.....	591.....	3,017.....	3,608.....	1,035.....	1,631.....	2,666
Total.....	511,588.....	429,964.....	941,552.....	718,115.....	438,214.....	1,156,329

RECAPITULATION.

	1850	1849	Am. excess
Free states—American tonnage.....	2,121,100	2,045,609	75,491
Foreign tonnage.....	1,297,282	1,247,495	
Excess of American tonnage.....	823,818	798,114	
	798,114		
Decrease of Foreign tonnage.....	25,704		
Increase of American.....			75,491

	1850	1849	Am. decrease
Slave states—American tonnage.....	511,588	718,115	206,527
Foreign tonnage.....	429,964	438,214	
Excess of American tonnage.....	81,624	279,901	
		81,624	
Increase of Foreign tonnage.....		198,277	206,527

FURTHER RECAPITULATION.

		Increase
Free states—Aggregate tonnage in 1850.....	3,418,382	
Aggregate tonnage in 1849.....	3,293,104	
		125,278
Slave states—Aggregate tonnage in 1850.....	941,552	
Aggregate tonnage in 1849.....	1,156,329	
		214,777

The above classification of tonnage belonging to the non-holding and slave-holding states, furnishes an instructive subject of comment. It will be seen, that in the free states there was an increase in the aggregate tonnage for 1850 over the preceding year; while in the slave states there was a decrease. Another fact is observable from the above recapitulation; in the free states, there was an increase in the excess of American tonnage; while in the slave states the reverse was the case; the American tonnage decreased to the amount of 206,527 tons, and the excess of foreign tonnage increased 198,277 tons, but in the aggregate the falling off in the slave states was 214,777 tons, or nearly one-fourth of entire shipping list. By particularizing, we find, that in some of the southern states, the falling off in the year 1850 was most remarkable. In Maryland, the decrease was 23,000 tons; in the District of Columbia, 1,000 tons; Virginia, 4,000 tons; South Carolina, 22,000 tons; Georgia, 12,000 tons; Florida, 9,000 tons; Alabama, 36,000 tons; North Carolina, 14,000 tons, and Louisiana 118,000 tons. Texas is the only southern state that increased her tonnage in the year 1850.

In the northern states, only four states experienced a decrease; these are, Vermont, Pennsylvania, Michigan and Illinois. In the whole of the free states, the aggregate increase in the year 1850, was 125,278 tons.

SOUTH—PUBLIC DOMAINS OF.—A writer in the New-York Commercial Advertiser, admits the fact, that throughout all the *free*

states the sentiment of "free land" is becoming immensely popular, and with great candor gives the reason of it, and the great end which is to be consummated.

States	Area of States in acres	Owned by States	Owned by Gen. Government.
Missouri.....	43,123,200	14,212,190	28,911,010
Alabama.....	32,462,080	15,214,048	17,248,032
Mississippi.....	30,174,080	18,480,377	11,693,703
Louisiana.....	29,715,840	8,790,282	20,925,558
Arkansas.....	33,406,720	6,149,755	27,256,765
Florida.....	37,931,520	4,414,255	33,517,265
Aggregate.....	206,813,240	67,960,907	139,852,333
Area of the six slave-holding states.....	206,913,240		
Owned thereof by the general government.....			139,852,333
Owned by the states in their state capacity.....			67,960,907

Thus, in the slave states the general government still holds the proprietary of 139,913,240 acres.

"The population of the states alluded to, in 1790, and that in 1840, shows an increase so trifling, compared with that of the northern states of the Union, that it would require five hundred years for the states themselves to occupy the unemployed lands with a population as dense as that of any of the rural districts of Great Britain. Unable or indisposed to purchase the domain themselves, (and a northern speculator finds his prejudices superior to his interests in this respect,) the lands must remain in their primitive wastes, or become the homes of the worthy settler, whose repugnance to slavery need not prevent him from accepting as a gratuity that in which he is unwilling to invest capital. Now look at the consequences to the states respectively. The influx of this species of population would change the tone of the present minority to a great majority, and the institution of slavery would be abolished in twenty years. For instance, Arkansas contains 33,406,720 square acres of territory; of this the state owns only 6,149,755 acres, and the general government 27,256,765 acres. Her population now is 97,574. Who will doubt that if a donation bill were

passed at the present session, in five years Arkansas would contain 200,000 free-soilers to outvote this minority of 97,574! Now let us look at the present population of these six states, the slave-holding increase, according to the landed capacity of the state, and the free soil increase, according to the area allowed by the government domain.

Present population, exclusive of slaves . . . 1,222,121

	State	Gen. Government.
Capacity for increase at the rate of 100 to the square mile	10,622,000	
Capacity for increase at same rate		21,851,900
Or double the slaveholding increase; and while the latter are multiplying their hundreds, the former will be multiplying their thousands."		

SOUTHERN AND NORTHERN TROOPS IN THE REVOLUTIONARY WAR.

	1775	1776	1777	1778	1779	1780	1781	1782	1783
New-Hampshire	2,824	4,019	4,483	1,783	1,222	1,767	700	744	733
Massachusetts	16,444	20,372	12,591	13,437	7,738	7,889	5,298	4,423	4,370
Rhode Island	1,193	1,900	2,048	3,056	1,263	915	464	481	372
Connecticut	4,507	13,227	6,563	4,010	3,544	3,689	3,921	1,732	1,790
New-York	2,075	5,344	5,332	2,190	3,756	4,838	1,178	1,198	1,169
New-Jersey	—	9,086	2,908	2,580	1,276	1,267	823	660	676
Delaware	—	754	1,299	349	317	556	89	164	235
Maryland	—	3,329	7,565	3,307	2,849	2,065	2,107	1,280	974
Virginia	3,180	6,181	11,013	7,836	7,573	6,986	6,119	2,204	629
North Carolina	2,000	4,134	1,281	1,287	4,920	6,132	3,545	1,105	697
South Carolina	4,000	6,069	2,000	3,650	4,500	9,132	3,000	3,152	139
Georgia	1,000	2,300	2,173	3,873	837	1,272	750	1,326	145
Pennsylvania	400	10,395	9,464	3,684	3,476	3,337	1,346	1,265	1,598
Total	37,623	89,651	68,720	51,052	41,584	42,826	29,346	18,006	13,476
South of Pennsylvania	10,180	22,013	24,032	20,033	20,679	26,187	15,521	9,067	2,594

1775.—The numbers are those in Continental pay. The Virginians were 6 and 8 months' men, and state troops; the North Carolinians were 3 months, and Georgians 9 months. All others enlisted to 31st December, 1775.

1776.—The returns are actual, and approximate and include militia and continentals. 3000 of the men from northern states averaged but 4 months; 7000 from the Carolinas averaged 6 and 8 months.

1777.—Includes militia and continentals. 1113 New-Hampshire men were for 3 months; 2200 for 2 months; 2775 Massachusetts, 3 months; 2000 2 months; 1500 Rhode Island men, for 6 months; 2000 Connecticut, 2 months; 1500 New-Jersey, 2 months; 2481 Pennsylvania, 5 months; 2000, 3 months; 3420 New-York, 6 months; 1000 Delaware, 2 months; 1535 Maryland, 3 months; 4000 2 months; 1269 Virginia, 5 months; 4000 2 months; 350 South Carolina, 8 months.

1778.—Includes militia and continentals. 500 New-Hampshire militia were for 2 months; 4500 Massachusetts, 2 months; 1000 New-Jersey, and 2000 Virginia, 2 months; 2000 South Carolina, 3 months; 2000 Georgia, 6 months; part of Massachusetts and Virginia militia were for guarding Convention.

1779.—Includes militia and continentals. 1500 New-York militia, for 3 months; 3000

Virginia, 2, 1000, 6 months; 1000 North Carolina, 8 months; 4500 South Carolina, 9 months.

1780.—Includes militia and continentals, 9000 New-York militia, for 2 months; 1500 Virginia, 12, 3000 3 months; 3000 North Carolina, average 12 months; 5000 South Carolina, average 4, 1000 8 months.

1781.—Includes troops and militia. All the Massachusetts and Connecticut men are enlisted for 4 months.

1782.—South Carolina militia, for 4 months.

1783.—All continentals. Army at the North discharged 5th November, 1783; at the South, 15th November, 1783.

Remarks on the Whole.—Supposing the average period of enlistment for all the years to be about the same, North and South, it will be seen that in the first years of the Revolution, when the war was chiefly at the North, the southern states supplied, each year, about one-third of the whole number of enlistments; as soon, however, as the war extended southward, and became general, the southern states rapidly advanced, supplying one-half; and for 1780, 1781, and 1782, more than one-half of all the enlistments. Mr. Seybert refers to a paper presented to Congress in 1811, which shows the regular troops raised in the Revolution, number serviceable in camp, and expense of the army.

	1775	1776	1777	1778	1779	1780	1781	1782	1783
Total men	27,443	46,891	34,820	32,899	27,699	21,015	13,292	14,556	13,476
Serviceable in camp. 15,000	25,000	26,000	1,900	18,000	19,000	10,000	11,000	12,000	
Expense	\$20,061.666	24986.538	24986386	10794625	3000000	1942462	3631745	3775063	
Total expenses, including sundry items							\$135,103,703.		

SOUTHERN AND NORTHERN TROOPS IN THE MEXICAN WAR.—The following table was made up for the New-York Sun, from official data. In the preceding article is a table of the soldiers furnished by different states, in the Revolution. A writer in the Philadelphia North American conceives that we give too great a preponderance to the North, whose soldiers enlisted often, and for very short periods. This does most materially affect the case, and we are obliged to the writer for the correction.

From Non-slaveholding States.

		Men
Massachusetts.....	1 Reg.....	930
New-York.....	2 ".....	1,690
New-Jersey.....	1 Bat.....	420
Pennsylvania.....	2 Reg. and 3 Com.....	2,117
Ohio.....	5 " and 3 ".....	5,334
Michigan.....	1 " and 1 ".....	970
Indiana.....	5 ".....	4,329
Illinois.....	6 " and 1 Bat.....	5,971
Wisconsin.....	2 Com.....	146
Iowa.....	3 ".....	229
Total from the free states.....		22,136

From states south of Mason and Dixon's Line.

Maryland & D. C.	11 Com.....	1,274
Virginia.....	1 Reg.....	1,182
North Carolina.....	1 Reg.....	895
South Carolina.....	1 Reg.....	937
Georgia.....	1 Reg. and 12 Com.....	1,897
Alabama.....	3 Reg. and 13 Com.....	2,981
Mississippi.....	2 Reg. and 1 Bat.....	2,235
Louisiana.....	7 Reg., 4 Bat. and 1 Company.....	7,041
Tennessee.....	5 Reg.....	5,090
Kentucky.....	4 Reg.....	4,694
Missouri.....	69 Com.....	6,441
Arkansas.....	16 Com.....	1,312
Florida.....	4 Com.....	298
Texas.....	99 Com.....	6,955
Total from the South.....		43,213

SLAVES—FUGITIVE, AT THE NORTH.

—(SEE NEGROES AND NEGRO SLAVERY.)—We have before us a pamphlet, published within the last few months at Washington, with the signature of *Randolph of Roanoke*, which examines critically many of the

questions involved between the North and the South.

1. That the natural increase of the southern slaves exceeds that of any other condition of men on this continent.

2. That the general census cannot show the fact, because it adds to the natural increase of the white race here, the vast annual accession from foreign emigration; and on the other hand, it allows nothing at all for these vast annual deductions from slave-numbers, which are made through private emancipation, and escape and enfranchisement at the North; and hence, the census gives the white race the precedence in natural increase.

3. This being so, and such the cause, that the white population of the United States about doubles itself in every period of two and a half decennial cycles, or twenty-five years.

4. That the slave population of the United States more than doubles itself in every period of three decennial cycles, or thirty years, from the natural increase alone.

5. That the free negroes of the southern states double in about every period of three and a half decennial cycles, or thirty-five years, from the natural increase alone.

6. That the free negroes in the northern and western states double in about every period of four decennial cycles, or forty years, from the natural increase alone.

7. That the free negroes of the southern states are the most stable and least migratory of any class of the population of the United States, if we except their migrations to other slave states.

8. That considerably more of the free negroes migrate from the free states to the slave states, than from the slave states to the free states.

That forty-nine fiftieths of all native negroes of the slave states who are found in the free states, are or were fugitive slaves when they left the slave states.

Census of Free Negroes in the New-England States from 1810 to 1840.

	1810	1820	1830	1840	Increase in 30 years	Increase pr. an.
New-England States.....	19,487	20,736	21,181	22,625	3 1-6 per cent	1-10 of 1 per cent.

Census of Free Negroes in the six original Slave States, from 1810 to 1840.

	1810	1820	1830	1840	Increase in 30 yrs.	Inc. pr. an.
Orig. Slave States.....	84,254	112,578	145,091	158,356	60 per cent	2 per cent.

Free Negroes in the Middle and Free States, 1810 to 1840.

	1810	1820	1830	1840	Increase in 30 years	Increase pr. an.
Middle Free States						
New-York.....	25,333	39,279	44,870	50,027	95½ per cent	3 5-6 per cent.
New-Jersey.....	7,843	12,460	18,303	21,044	168½	5½
Pennsylvania.....	22,492	30,203	37,970	48,954	117½	3¾
Ohio.....	1,899	4,723	9,538	17,342	813	27
Indiana.....	373	1,230	3,629	7,165	1874½	62½
Illinois.....	613	457	1,637	3,598	487	6¼
Michigan.....	120	174	261	7,07	500	16 2-3

Tot. in Mid. States.. 59673.....78,545.....116,217.....149,204.....250 per cent.....8½ per cent.

He now goes into a calculation of the actual number of fugitive slaves who have been, or are still protected and sustained at the North, and arrives at results, we confess, which were never apprehended in the tenth part by us. We will give these results, and the course of argumentation which produced them.

The author takes the New-England states as least affected by runaway slaves from their position, and finding the rate of increase of the same population in the six original slave states—from the two he forms a *mean*, which is taken as about the *natural* rate of increase. This will give a higher rate than the reality, from the fact that some slaves do escape to New-England, and many are manumitted at the South. However, adopting this mean, and contrasting it with the increase of free blacks in the middle or *border-line* states, the excess of such increase will measure the actual loss which southern slavery has sustained. From this, Randolph makes a deduction of the slaves manumitted at the North since 1810, but whether he has taken a figure high enough, it is impossible, with our limited information, here to say. This deduction is one-fifth of the whole increase above the natural rate, which would seem to be sufficient when it is reflected how large a portion of northern emancipated slaves were shipped off to the South before their freedom could take effect.

The following are the figures and facts of the calculation:

"The increase of population in the United States is unexampled in all the world. Even bating its accession from foreign emigration, and it is still without a rival. As it is, and as I have said, it doubles itself in twenty-five years. The rate of increase, therefore, is *four per cent. per annum*. Now turn to the free negroes of New-England. They have dwindled and dwindled, until they have almost reached a stand still. Their annual increase amounts to but one-tenth of *one per cent*! They could not double themselves, at that rate, short of four hundred years! The South's fugitive slaves, which New-England is known to shelter and free annually, without compensating their owners, (independently of the large numbers she aids in escaping to Canada,) more than accounts for her entire annual increase, and consequently shows her native negro population gradually wearing out and wasting away.

"Even the free negroes of the six original slave states of Delaware, Maryland, Virginia, North Carolina, South Carolina, and Georgia, only show an annual increase of two per cent., but the deficiency is fully accounted for in the migration of free negroes from the old to the new slave states.

"But turning from these common-place details, and casting our eyes upon the columns portraying the progress of free negroism, in those of the free states which border on, or are almost equally accessible to the slave states, and lo! what wonders and contrasts strike and astonish us! The very *minimum* of increase in the seven middle free states, reaches to $3\frac{1}{4}$ per cent. per annum, while Massachusetts, with her great free negro thoroughfare of Boston, reaches no higher than to seven-eighths of one per cent. per annum! Why, at the rate of $3\frac{1}{4}$ per cent. per annum, they would double every twenty-seven years, and it is but one quarter of one per cent. per

annum less than the rate of increase of the white population of the United States, and falls but that much short, therefore, of doubling itself in every twenty-five years! So much for the *minimum* of increase.

"But what are we to say of the *maximum* of increase in these states, of this the most sluggish and unthrifty class of people within our borders? On turning to the rolls for Illinois and Michigan, I found these states had been absorbed and deeply intent upon the *manufacturing* of free negroes, and increasing their store at the amazing rate of upwards of sixteen per cent. per annum, *each*, and as no community of living mothers ever gave births in *quadruples*, it was plain that these fabled procreations were but the spoils of felonious plunder, and under the morals of the Free-soilers, that numbers give law, and thefts give title, numerous and valuable slaves are enticed from their owners; and, in association with the vilest and most worthless that shame the earth, they are hidden away in the chrysalis as fugitives from labor, but soon to emerge and take wing as fugitives from justice! Only to think of an increase of sixteen per cent. per annum, the quadruple of that of the United States, and which would double the free negro population of those states every six and a quarter years! But why should I dwell on these cases when there stands Ohio augmenting her free negroes out of the South's fugitive slaves, until her rate of increase per annum has actually attained to twenty-seven per cent., which would nearly double them seven times in twenty-five years, or more than double them every four years; and even such a marvel is lost in the wonder that here stands Indiana by her side, conspicuous over all, in the unexampled augmentation of her free negroes up to $62\frac{1}{2}$ per cent. per annum! At this rate of increase, instead of doubling, like the population of the United States, once in twenty-five years, the free negro population of Indiana doubles, and has doubled itself in that time, fifteen times, and in a word, doubles itself every other year, with $12\frac{1}{2}$ per cent. per annum of increase to spare!

"I find the excessive augmentation of free negroes (*fugitive slaves*) beyond the natural and usual means, in the states now to be named, to be as follows:—

New-York $3\frac{1}{2}$ 5-6 per cent.;	
excess over $2\frac{1}{2}$ per cent. . .	5,734 <i>Fugitive Slaves</i> .
New-Jersey $5\frac{1}{2}$ per cent.;	
excess over $2\frac{1}{2}$ per cent. . .	7,221 " "
Pennsylvania $3\frac{1}{4}$ per cent.;	
excess over $2\frac{1}{2}$ per cent. . .	9,602 " "
Ohio 27 per cent.; excess	
over $2\frac{1}{2}$ per cent.	14,033 " "
Indiana $16\frac{1}{2}$ per cent.; ex-	
cess over $2\frac{1}{2}$ per cent. . . .	6,502 " "
Illinois $16\frac{1}{2}$ per cent.; ex-	
cess over $2\frac{1}{2}$ per cent. . . .	2,535 " "
Michigan $16\frac{1}{2}$ per cent.; ex-	
cess over $2\frac{1}{2}$ per cent. . . .	497 " "

Total fugitive slaves in the } above estimates. 46,224 in 30 years.
Add the estimated number of
fugitive slaves from 1840 to
1850, upon the ratio shown
between 1830 and 1840. . . 15,400 in 10 years.

Total fugitive slaves from
1810 to 1850 61,624 in 40 years.

Number of fugitive slaves
escaping to the states *an-*
nually 1,540
To 61,624 fugitive slaves,
valued at \$450 each \$27,730,800
To the loss annually of 1,540
fugitive slaves at \$450 each \$693,000

"I shall now strike one-fifth, or 20 per centum from the estimates of both the aggregate and annual losses, reducing the former to \$22,184,640, and the latter to \$553,400; and (for good measure) casting into the account New-England's share of liability

to the South during the same period, for the like aggressions, and not less than five hundred slaves, (valued at \$225,000,) whom the North assists annually to escape to Canada.

"Who are liable for the payment? Those who took the property—those who received it—those who kept it—those who gave it protection—and those who evaded or resisted its reclamation: The citizens of the free states are liable—the governments of those states are liable—or, in one comprehensive word, the *North* is liable. There is not a legal forum in Christendom, where such a claim, for such a cause, with equal proofs, between man and man, or nation and nation, would not be recognized and enforced."

SLAVES.—DANGERS WHICH ENVIRON SLAVES IN THE UNION.—Gen. Felix Houston delivered, not long since, an address at Lexington, Miss., in which he reviewed the causes injuriously affecting the prospects of the slave states, and concluded with a recapitulation, which, as the expression of the whole of a great matter in a nut-shell, we take the liberty of quoting:

"1st. From the abolition feeling in the North which threatens its destruction, manifested as follows:

"2d. The exclusion of slavery from all the territories.

"3d. The abolition of slavery in the District of Columbia, in the docks, navy yards, on the high seas, and in all places subject to the legislation of Congress.

"4th. The opening of diplomatic relations with Hayti and Liberia.

"5th. The Ebony line.

"6th. The prohibition of the slave trade between the states.

"7th. Continual agitation, the formation of abolition societies, the union of the churches against slavery, and abduction of slaves from the border slaveholding states.

"8th. Nullification of the article of the Constitution providing for the surrender of the fugitive slaves.

"9th. Receiving negroes as citizens in the non-slaveholding states, and claiming for them the rights of citizens in the slaveholding states, and the right to hold office under the General Government.

"10th. The colonization of Abolitionists in the border slaveholding states

"11th. The seductions of the General Government, which, by its wealth and patronage, bribes Southern members of Congress to betray their constituents.

"12th. Adverse legislation, and throwing the burdens of Government on the productions and labor of the South.

"13th. The enormous and vastly increasing expenditures of Government.

"14th. The expenses of defences against the Indians, exploring the country, surveying the Pacific coast, erecting light-houses, and supporting territorial governments in countries from which the South is excluded; which may, in the aggregate, be set down at no less than twenty millions of dollars per annum."

SLAVERY NORTH AND SOUTH.—

We extract the following remarks from an address made a short time ago, in Macon county, Georgia, by our esteemed friend, Stephen F. Miller, Esq., a copy of which he has kindly sent us. The readers of the Review will perhaps remember Mr. Miller as having been associated a short time with us in the *editorial* department, where we found him a most laborious, active, untiring,

and intelligent *confreere*, and have ever lamented that his services could not have been retained for the Review. Our best wishes are with him, however, in whatever field of usefulness he may be employed.

On the 4th of July, 1776, domestic slavery existed in all the American colonies that declared independence of Great Britain. Of the thirteen original members of the confederacy, seven have abolished it. Nine slaveholding and eight non-slaveholding states have since been added to the Union. The following table shows the slave population in 1776:

1. Massachusetts.....	3,500
2. Rhode Island.....	4,373
3. Connecticut.....	6,000
4. New-Hampshire.....	629
5. New-York.....	15,000
6. New-Jersey.....	7,600
7. Pennsylvania.....	10,000
8. Delaware.....	9,000
9. Maryland.....	80,000
10. Virginia.....	165,000
11. North Carolina.....	75,000
12. South Carolina.....	110,000
13. Georgia.....	16,000

Total number of slaves in 1776.....502,132

African slavery would have existed to this day in the northern states had it been sufficiently profitable; but as the climate was too cold for cotton, rice and sugar, slave labor was discarded—it did not pay.

If concession be a merit, the South set an early example. She yielded two fifths of her slaves in 1787, in apportioning representatives; whilst the North retained every person of color within her limits, as a basis of power in Congress. This fact is an admission of property. What else could have induced the South to assent to this classification, or the North to claim the abatement, in the number of representatives, under the Federal Constitution? The subject produced much feeling between the two sections, and led to the first *compromise* in our political system.

As to the propriety of slave labor, the North has no right to judge. She may cherish manufactures, run ships, cultivate orchards, or do whatever else she pleases within her own sphere, and the South says not a word; but when she turns champion of a false and misguided humanity, and takes upon herself the guardianship of the South, well may we resist the usurpation. For the last fifteen years we have protested in vain. From a few crazy memorials to Congress, abolition has swelled to its present hideous bulk.

With Louisiana, we acquired from France in 1803, that immense region extending from the Mississippi to the Rio Grande, then a slave country. When Missouri applied for admission into the Union, in 1820, the North objected, because she recognized slavery in her constitution. This drew the line of 36

degrees 30 minutes, to quiet the troubled waters, and was the first exercise by Congress of the power to legislate on slavery under the constitution. After the treaty of 1819 with Spain, our western limits were greatly contracted. Beginning where Virginia and North Carolina connect on the Atlantic coast, and thence westward to the 100th degree of longitude, the Missouri parallel, crossing 25 degrees, formed the barrier to slavery in all states north of it and west of the Mississippi river. Since then we have added twenty-two degrees to the Pacific, making about 3,500 miles from ocean to ocean. For comparison I submit a statement, showing the relative strength of the North and South, in extent and population :

FREE STATES.

	Sq. miles.	Population.
1. Michigan.....	56,243	212,267
2. Illinois.....	55,405	476,183
3. Wisconsin.....	53,924	30,945
4. Iowa.....	50,914	43,112
5. Pennsylvania.....	47,000	1,724,033
6. New-York.....	46,000	2,128,921
7. Ohio.....	39,964	1,519,467
8. Maine.....	35,000	501,793
9. Indiana.....	33,809	685,866
10. New-Hampshire.....	8,030	284,574
11. Vermont.....	8,000	291,948
12. Massachusetts.....	7,250	737,699
13. New-Jersey.....	6,851	375,651
14. Connecticut.....	4,750	352,411
15. Rhode Island.....	1,200	108,830
Total.....	454,340	9,783,710

SLAVE STATES.

	Sq. miles.	Population.
1. Texas.....	325,520	—
2. Missouri.....	67,380	383,702
3. Virginia.....	61,352	1,239,797
4. Florida.....	59,268	54,477
5. Georgia.....	58,000	691,392
6. Arkansas.....	52,198	97,574
7. Alabama.....	50,722	590,756
8. Mississippi.....	47,147	375,651
9. Louisiana.....	46,431	373,306
10. North Carolina.....	45,509	753,419
11. Tennessee.....	44,000	829,210
12. Kentucky.....	37,680	779,828
13. South Carolina.....	28,000	594,398
14. Maryland.....	11,000	470,019
15. Delaware.....	2,120	78,085
Total.....	936,318	7,311,614

These tables include all persons whatever, white and black. Of the number in the South, 2,486,226 are slaves, according to the census of 1840. An enumeration is now in progress, which, we presume, will show an increase of about 30 per cent. in the entire population.

Whilst conferring together on the blessings of the Union, let us briefly glance at our resources—that our adversary may take warning, as well from what he will lose, as from what we shall continue to possess, in the event of a dissolution.

The cotton crop of the United States for the last ten years has averaged 2,100,000 bales. To raise this quantity, let 500 pounds

in seed to the acre, five bales to the hand, 450 pounds to the bale, and 7 cents per lb. be assumed in the estimate. We then have :

7,560,000 acres in cultivation, worth	
420,000 slaves in cotton fields, worth	\$ 75,600,000
\$600.....	252,000,000
Capital invested in cotton.....	\$327,000,000

With the land and force here stated, the South is able to export annually 2,100,000 bales, worth \$66,500,000—an interest of nearly 20 per cent. Out of this, however, expenses of every kind have to be paid, reducing the actual gain probably to 8 per cent. This, we think, is about the medium of the cotton growing states. Perhaps it may slide as low as five per cent. Of course there are exceptions ; some planters realizing more, and others less, according to their skill and opportunity. Besides the choice hands assigned to cotton, the remaining 2,000,000 of slaves in the South may be averaged at \$400, making a total of \$800,000,000 of that kind of property employed otherwise. The cotton mills, rail-roads, merchandize and shipping of the North may be more productive, but are not equal in magnitude of value, or more essential to her well-being. In addition to cotton, two other important articles, produced exclusively by slave labor, ought to be mentioned—sugar and rice. These crops are of the annual value of \$20,000,000, to say nothing of tobacco, worth \$15,000,000 more, raised in slave states. Thus we have upwards of \$100,000,000 annually, produced by slave labor, for market, exclusive of provisions. For nearly all this stupendous yield, and its multiplied exchanges, the North is the carrier, and commission merchant, levying enormous profits on the South. In case the Union is dissolved, Charleston, Savannah, Mobile and New-Orleans will be the importing marts for the South, instead of New-York and Boston. Manufactories are already established, and still rapidly advancing, in the South. Our neighboring city of Columbus is the future Lowell. As a mere question of profit and loss, which party will suffer most by disunion ?—(See *Negroes*.)

SLAVE TRADE, &c.—The recent hostile operations of the British on the coast of Guinea, which resulted in the destruction of the African town of Lagos, has given rise to special inquiries in the House of Commons respecting the present condition of the slave trade in Western Africa, the circumstances which led to the attack on Lagos, and the effect, good or bad, of maintaining a naval force on that coast for the suppression of slave trade. These inquiries (says the Boston Courier) have brought out certain documents from the British government, which contain

some very curious and interesting facts. We shall proceed to lay a few specimens before our readers :

The first of these papers is a dispatch dated June 30, 1840, and addressed by Lord Palmerston to a Mr. Beecroft, conferring on that gentleman the appointment of Consul at certain places on the African coast, and instructing him to use every possible influence to induce the native kings or chiefs to exchange the slave trade for a more humane and profitable description of traffic. The British Secretary had already written to the King of Dahomey, to impress upon his majesty a knowledge of the fact that agriculture and commerce are more useful and advantageous than the stealing and selling of men, women, and children. The African monarch sent a reply, which furnishes in a striking manner the measure of his capacity to judge of the motives that induce the people of Christendom to interfere in matters relating to the slave trade, and which show, moreover, how little has been done to make the potentates of Western Africa view this question under a moral aspect :

"The King of Dahomey presents his best compliments to the Queen of England. The presents which she has sent him are very acceptable, and are good for his face. When Governor Winiett visited the king, the king told him that he must consult his people before he could give a final answer about the slave trade. He cannot see that he and his people can do without it. It is from the slave trade that he derives his principal revenue. This he has explained in a long palaver to Mr. Cruickshank. He begs the Queen of England to put a stop to the slave trade everywhere else, *and allow him to continue it.*"

The letter concludes with another request of the king, from which it appears that this personage is sharp-sighted enough to see that the prosperity of his subjects may prove dangerous to his despotic power. Many a king of Christendom has felt as awkwardly as the sovereign of Dahomey at seeing his people grow rich, without speaking his mind, so honestly as this sable monarch :

"The king begs the queen to make a law that no ships be allowed to trade at any place near his dominions lower down the coast than Whydah, *as, by means of trading vessels, the people are getting rich, and resisting his authority.* He hopes the queen will send him some good tower guns and blunderbusses, and plenty of them, to enable him to make war. He also uses much cowries, and wishes the queen's subjects to bring plenty of them to Whydah, to make trade. He wishes to see plenty of Englishmen making trade at Whydah."

In consequence of these negotiations, Lieut. Forbes, a British naval officer, was requested by the king to visit him at Abomey, his capital city. The following extracts from his narrative will be read with a singular interest :

"Having entered the gate of the city, which is ornamented with human skulls, and in the vicinity of the principal Fetish-house, we halted, and taking position in chairs across the road, waited for the ceremony of being met by the Cabooceers. In a short time an immense crowd advanced towards us, with

banners flying amongst them. At some distance they halted, and the governor of the city, at the head of a few soldiers, advanced. When arrived in front of our positions, he countermarched and made a circle from left to right three times round our seats, bowing each time when he came in front. On the last time he fired off a musket and danced before us ; then, having shaken hands, he took a seat. The square in front of the palace, though extremely large, was densely crowded with armed men and women, squatted on their hams, their long Danish muskets standing up like a miniature forest. Banners abounded, those of the king being uniformly surmounted by a skull. This ghastly style of ornament appears to be particularly in request in Dahomey. The palace wall of red clay, standing about twenty-five feet high, extending over more than a square mile, was one continued line of human skulls ; yet it might be remarked that where decay had destroyed them, these ghastly ornaments were not replaced. On the thresholds and sides of the portals of the palace were also human skulls ; but the practice of human sacrifice is fast vanishing from the kingdom of Dahomey."

Lieut. Forbes witnessed a specimen of despotic power which ill agrees with the concluding statement of the above passage. Ten persons of rank, who had given offence to the king, were led prisoners about the city, and compelled to dance, after which their heads were cut off with large knives, in presence of the British functionary, and in spite of his entreaties and remonstrances.

The King of Dahomey has a regular cabinet ; a Prime Minister, a Minister of Police, a Treasurer, a Minister of Justice, &c. He has eighteen thousand wives—if those who have counted them can be trusted—which we think rather doubtful. He has an army of Amazons, of which the following description is given :

"The king then expressed a wish I should witness a review of female troops, and two regiments were at once paraded, but not before the ground was shifted and marked out for the manoeuvring. The officers (females) were distinguished by armlets of silver reaching from the wrist to the elbow, and carrying each a small whip. The whole were uniformly dressed in tunics of blue and white, armed with a musket, club, and short sword, carried cartouch-boxes, and went through several evolutions, skirmishing, firing volleys, &c., with much precision."

The British officer treated his majesty to a basket of champagne, which was dispatched with great gusto at a dinner to which the former was invited. But the festivities were interrupted in an extraordinary manner :

"After drinking her majesty's health, the troops hurrahed, and the salute commenced ; but before it was half over we were obliged to scamper after the prime minister, and hide our faces against the wall, as a portion of the eighteen thousand royal wives were passing, ringing a small bell. These sable ladies are all over the town at all times, and no male may gaze on them unpunished."

The King's wives are notable fighters, and when a slave hunt is undertaken they are sure to catch more than the same number of male troops. The scale of his operations may be estimated when we state, that in one expedition he captured no fewer than nineteen thousand men, women, and children. After sacrificing five hundred, he sold the rest for

exportation. His annual revenue from the sale of slaves is estimated at about £60,000 a year. According to the latest accounts he had thrown off the mask, and was laughing at the credulity of the English, who had fancied that he would degrade himself by employing his Amazonian body-guard in the cultivation of cotton, or in any other peaceable pursuit.

According to the testimony of Lieut. Forbes the permanent cessation of the slave trade is a thing hardly to be expected. No organized system is required for its support. It might be suspended for a century, and then renewed at a week's notice. The British, it seems, have no confidence in the pledges to abstain from the traffic given by the African chiefs; and, with this belief, it is not likely that their blockading squadron will be withdrawn at present.

SLAVE TRADE OF AFRICA.—The London Anti-slavery Reporter publishes copious extracts from recent parliamentary documents relating to the African slave-trade, from which it appears that the traffic, after all the efforts which have been made to put it down by force, has suffered little abatement.

According to the report of the Slave-Trade Committee, the average number of slaves, (with the per cent. amount of loss,) exported from Africa to America, were as follows, in the periods designated:

Date	Ann. aver. number exp.	Average casualties during the voyage	
		Per cent	Amount
1798 to 1805.....	85,000.....	14.....	12,000
1805 to 1810.....	85,000.....	14.....	12,000
1810 to 1815.....	93,000.....	14.....	13,000
1815 to 1817.....	106,000.....	25.....	26,600
1817 to 1819.....	106,000.....	25.....	26,600
1819 to 1825.....	103,000.....	25.....	25,800
1825 to 1830.....	125,000.....	25.....	31,000
1830 to 1835.....	78,500.....	25.....	19,600
1835 to 1840.....	135,810.....	25.....	33,900

The following table shows the numbers (with the loss) exported from Africa to America, every year since 1840:

Years	Numbers	Loss	
		Per cent	Amount
1840.....	64,114.....	25.....	16,068
1841.....	43,097.....	25.....	11,274
1842.....	28,400.....	25.....	7,100
1843.....	55,062.....	25.....	13,765
1844.....	54,102.....	25.....	13,525
1845.....	36,758.....	25.....	9,189
1846.....	76,117.....	25.....	19,029
1847.....	84,356.....	25.....	21,089

So it appears that the slave-trade was actively carried on in 1847, as from 1798 to 1810—while the casualties or loss attending the traffic had increased from 14 per cent to 25, showing that while the vigorous means used to suppress the traffic had failed of this end, they had aggravated its horrors.

Brazil is the principal mart. The total number of slaves imported into Brazil, from

1840 to 1847, inclusive, was 249,800; the importation into the Spanish colonies, for the same period, was 52,027. According to the report of Mr. Westwood, acting consul at Rio Janeiro, there were in 1847, departures from that port of slavers—11 under the Brazilian flag, 6 under the Portuguese, 15 under the American, 5 under the French, 3 under the Hamburgese—in all, 40; arrivals—4 under the Brazilian flag, 4 under the Portuguese, 15 under the American, 4 under the French, 1 under the Swedish, 3 under the Hamburgese—in all, 31. It is mainly by the use of the American flag that the pirates are enabled to baffle the vigilance of the British cruisers.—*See Negroes.*

SLAVE TRADE ON COAST OF AFRICA, SIERRA LEONE.—The European settlements on the west coast of Africa are, to the northward, Goree and Senegal, owned by the French; Bessao and Cacheco, by the Portuguese; Gambia, Bulama, and Sierra Leone, by the English, with Cape Coast, Prince's Island, and Fernando Po, to the south.

The French do not export slaves across the Atlantic, although they tenaciously maintain domestic slavery in their settlements. On the contrary, the Portuguese in Bessao, Cacheco, and Cape Verde, carry on the traffic to a great extent under the flag of Brazil; as does Spain, also, preferring the Brazilian flag, which does not forfeit the vessel, and consequently remove it from the trade.

The notorious slave-dealer, Governor Kitara, resides at Bessao; with him Pedro Blanco, Martinez of Gallinas, Felipe de Souza, called by the natives Char Char, of Lagos and Whydah. These are justly considered the most extensive dealers on the west coast, and their adventures frequently come under the surveillance of the Mixed Courts in Sierra Leone.

To the southward of Bessao is the Nunez, situate on the river of the same name, and, under the dominion of the native chief, the Landewas, the resort of both French and English, whence are procured gold, ivory, wax, hides, coffee, and other productions; but in consequence of the frequent feuds among the chiefs, and incursions to the settlement for the object of plunder, the merchants have placed themselves under the protection of the British cruisers, which visit periodically. Rio Pongas, in the neighborhood of the Nunez, is almost exclusively engaged in the slave trade; consequently, legitimate commerce is little known there, nor is it the resort of any creditable merchant of the colony, as all mercantile operations there are of a very questionable character. From this place to Sierra Leone are the Isles de Los, Bogga country, from whence are procured

hides, wax, palm oil, small quantities of gold, ground nuts, mats, gum, ivory, &c.

We now come to the British colony of Sierra Leone, which merits particular attention from the solicitude with which the government has watched over it ever since its establishment. This colony was founded by the English in 1786, under the direction of Captain Tomson, of the navy, who took with him 400 distressed negroes from London, with about 60 whites, to prepare and cultivate that portion of the country which was ceded by King Tom for the purpose of colonization. This system, however, having soon failed, Messrs. Wilberforce, Thornton, and other intelligent persons, were induced to undertake the object upon a different system, justly reasoning that little benefit could be effected from the mere abolition of the slave trade, unless the natives were instructed in religion and the arts of civilization, which alone can render a people free.

Instances have occurred of slave dealing in the colony by *liberated Africans* themselves, as in the case of the notorious Gibson, sentenced to five years in a chain gang, but who, through the cognizance of the driver, escaped to the Mandingo shore, leaving the driver to serve the sentence in his place. Other cases of Mohammedans, Mandingoes, and Foulahs or Timannees, residents in the colony, are established, who have inveigled liberated African boys or children out of the colony and sold them in the interior. Cooper Thompson reports from Teembo that he there found a family so disposed of, and had resided for many years, but was ultimately liberated by King Alimammee Foodi Bocarri.

Cummings, a liberated African, on more occasions than one, has had bills presented to the grand jury against him for slave dealing; also a Mandigo, named Dowdah; but, from the manner in which the evidences are trained by the people in the interior, conviction is difficult, yet many have been punished severely.

Aiding and abetting in the traffic is more than suspected.

The purchasing of condemned slave vessels is a source of no inconsiderable profit, and of moment to the British merchant of the colony, sold as they are at a very low rate by the commissioner of appraisement and sale to the courts, and then re-sold to the Brazilian or Spaniard for double or treble the amount. In this way one of the most extensive merchants in the colony finds it not the worst part of mercantile speculations.

It is scarcely credible that women should have connected themselves with this speculation, as buyers, sellers, and kidnappers, among whom, one of the most notorious, was the infamously-famed Donna Maria de Cruz, daughter of the dreadful Gomez, governor of

Prince's Island. This disgrace to her sex, among other vessels captured by the British had the "Maria Pequena," seized by the "Victor," sloop. The burthen of this slaver was but five tons—yet, besides her crew, provisions, water, and other stores, she had taken on board twenty-six slaves, who were found stowed away, but with less care than so many fitches of bacon, between the water-casks and the deck, a space of only *eighteen inches* in height. Six of the creatures were dead, and the rest in a state of starvation.

SOUTH CAROLINA.—MINERALS FOR BUILDING PURPOSES, ETC.*—*Building Materials.*—It is owing to the difference in the facilities for transportation, that the granite, marble and flag-stone of Massachusetts and Connecticut are better known in Charleston and other cities, than those of the state, notwithstanding the abundance and quality of the latter.

In choosing building materials, strength and resistance to external agents are among the principal requisites. For strength, granite stands high in the scale of building materials. Its tendency to decay may be ascertained where it has been exposed to the weather for a long time. If the felspar in a fresh fracture appears dull, and the rock is found to absorb moisture, or to contain much iron pyrites, it should be rejected, although otherwise it may present but little signs of decay. The fine-grained granite of uniform appearance and structure is generally to be preferred where strength and durability are prominent objects. The granites and sienite around Columbia are of this character.

Among the beautiful granites of the state, the perphyritic granite of Camden and Buffalo creek, and the red granite, near Columbia, are conspicuous.

Of the sienites, those found in Abbeville, Fairfield and Lexington, are the most beautiful.

The former resembles the Quincy granite, and the latter is remarkable for its white felspar, contrasting so strikingly with the black crystals of hornblende.

The white and variegated marbles of Spartanburg and Laurens, form excellent materials for building and ornamental purposes. When quarries are opened on the Saluda, it is probable, from the bands of actynolite running through the beds, that some handsome slabs may be procured.

Flagging Stones.—Gneiss, besides furnishing an excellent building stone, is often sufficiently slaty in its structure to allow being split into slabs. A fine quarry of this sort is open in Pickens. In the lower part of York, gneiss is found having a similar structure; it passes into mica slate, which presents every

* Tuomey.

appearance of making an excellent flagging stone. As this locality is very near the Catawba, a trial might be made of it in flagging the walks in front of the state-house. The mica slate found in Fairfield is equally promising.

Fire Stones.—Stones, useful for this purpose, must not only be infusible, but must have no tendency to crack or exfoliate. At the iron works, quartz rock is preferred for hearth stones and other similar purposes. As this rock frequently passes into compact or common quartz, and is then entirely useless, it should be remembered that the more arenaceous the rock is, the better, the slight cohesion of the particles allowing expansion without cracking or exfoliation. It should be free from iron. Mica slates make good fire stones, when free from garnets and iron.

Soap Stone.—This exceeding useful rock is of very fine quality, at some of the localities enumerated. The ease with which it can be shaped, added to its strength and refractory qualities, make it one of the most valuable of fire stones. For this purpose the softer varieties should always be chosen, and not those that contain quartz. A variety of this rock passing into chlorite, may be seen formed into tablets in many of the churchyards in the upper part of the state.

Porcelain Earth.—This material abounds through the primary regions, wherever the felspathic granite is found in a state of disintegration. Localities are so well known as "chalk hills," that they need not be enumerated. A long-known locality occurs above Pendleton, and along the base of the mountains in Pickens it is seen in several places; in Greenville, near where the Pendleton road crosses the Saluda; and in Abbeville, near the village, a remarkable locality was pointed out to me by Mr. Speiria. This deposit is the result of the decomposition of eurite. A similar deposit is found near Cherokee ford, where it is used as a fire clay; and it is seen again on Mr. Hardin's land, on the branches of King's creek.

But the finest exposures of this earth are found in the diluvium. As there is no hope at present of a manufactory of porcelain in the state, this earth will be found an excellent material for fire bricks. When it is found in beds in the diluvium, it is so very fine that coarse sand must be mixed with it. But where it is found in place, it generally contains quartz in sufficient quantity.

Common pottery is much improved, both in quality and appearance, by the addition of this earth, and from its abundance, were a little more taste and skill combined in the manufacture, the pottery of this state would be unrivalled. A good material for glazing pottery will be found in the undecomposed felspar of the granites, where it abounds; it should be ground with borax, and brought to a proper consistency by adding water.

Glass Making.—The pure white sand of the quartz rock, as well as that resulting from the decomposition of the hornstone at Brewer's mine, would answer well for the manufacture of glass.

The Pyritiferous Slate at Hale's mine, and at the Cowpens, are covered with a white efflorescence of sulphate of iron. At the former locality, the quantity of slate thrown out from the mine, is sufficient to justify an attempt to manufacture copperas from it.

Paints.—Red and yellow ochres abound in Chesterfield district, of very fine quality, yet they seem scarcely to be used, even for domestic purposes. All the preparation they need is simply grinding.

Whet Stones.—There are many localities where the micaceous and talco-micaceous slates would answer well for whetstones. A noted locality occurs in York, and another at Ewbanks, near Brewer's mine, in Chesterfield, and in the upper part of Lancaster. There are many others that I had no opportunity of examining.

Coal.—A glance at the table exhibiting the rocks of the state, will show at once that there is no possibility of the occurrence of coal—the immense series of rock which include the coal formation, between the clay slate and the new red sandstone, being entirely wanting.

Even this negative information, should it lead to greater economy in the use of fuel, particularly at the iron works, would not be useless.

The geologists of England are cautioning their countrymen against the wilful destruction of coal at home, and its unlimited exportation to foreign countries, for her coal beds, though immense, are not inexhaustible.

The preservation of the forests in the mining districts of the state cannot be too strenuously urged upon the owners of the land in those districts.

The geologist who would close a report on the minerals and mines of the state, without adverting to the frightful disregard of the future every where evident, would discharge his duty but indifferently.

If an individual opens a limestone quarry, he supplies himself from the surface of the bed, throws back the refuse and superincumbent earth, to be removed by some one else, or perhaps by himself. A gold mine is destroyed that a rich vein may be followed which offers immediate profit, and the surface of the beds of iron ore is skimmed over to the destruction of the underlying beds, because a few tons can be obtained at a cheaper rate. Such a course as this needs no argument to point out its ruinous consequences.

SOUTH CAROLINA STATISTICS.—In the following table is exhibited, first, the total population of South Carolina, at each

census taken by the United States; second, the slave population; thirdly, the number of representatives in Congress for each decennial period; fourthly, the number of free colored persons, all according to the United

States census returns. The two last columns exhibit the population, according to the state census, which is always one year in advance of the federal reckoning:

STATE CENSUS.

Years	Total	Slaves	Rep's	Free col'd	White	Slaves
1790	249,073	107,094	6	1,801	—	—
1800	345,591	146,151	8	3,185	—	—
1810	415,115	196,365	9	4,554	217,842	196,365
1820	502,741	258,475	9	6,826	231,828	235,219
1830	581,185	315,401	9	7,921	250,943	285,439
1840	594,398	327,038	7	8,276	257,117	298,115
1850	—	—	—	—	280,385	358,714

Slaves are not enumerated in our state census, but the numbers above set down are taken from the report of the Controller-General, founded on the tax returns of the state. In the United States census, slaves are enumerated for the purpose of representation.

SOUTH CAROLINA—AGRICULTURAL AND PHYSICAL CAPABILITIES OF; TERRITORY; CLIMATE; SOILS; SWAMPS; NAVIGATION; HEALTH; NATURAL MANURES; MINERALS; AGRICULTURE; PRODUCTS.*—What, then, are the agricultural capabilities of South Carolina? In richness, variety and abundance, perhaps no part of the habitable globe, of the same territorial extent, exceeds them. Of the four great materials for human clothing—cotton, wool, silk† and flax‡—her climate and soil are peculiarly adapted to the first three, and, in locations, to the last. Of the prominent articles of food, she produces rice, wheat, Indian corn, oats, rye, barley, sweet and Irish potatoes, and the different varieties of the pea tribe. For the habitation of man, the earth, her granaries and forests, furnish an inexhaustible supply. Iron, so essential to the wants of every class in society, is superior in quality, it has been ascertained, to any found in the country. Gold, not too abundant to divert from other and more profitable pursuits, but an inconsiderable amount of capital, excites the enterprise and rewards the labor of a portion of our citizens. In other minerals, hereafter to be noticed, she is neither deficient in quantity nor value.

* We are obliged to Gov. Seabrook for his most able and elaborate essay upon the agricultural capacities of South Carolina, and the means of improving them—"prepared at the request of the State Agricultural Society." From this essay, we make such extracts as appear above, and regret space will not admit of more. Governor Seabrook passes in review the whole duty of the state and its citizens, in regard to public wealth. He is particularly excellent in the discussion of "agricultural societies"—"the pine lands"—"reclamation of swamps"—"deep plowing"—"drainages"—"manure"—"peat"—"sheep-walks"—"the grasses"—"rotation of crops"—"the cow pea," &c.

† In 1759, South Carolina exported 10,000 lbs. of raw silk.

‡ *Linum Virginicum*, or Virginia flax, is an indigenous plant, and of the same family with *linum usitatissimum*, or common flax.

While the woods abound in game, including the deer and turkey, the ocean which leaves her southern border, and the numerous streams, both salt and fresh, that penetrate every part of her surface, yield almost every variety of the choicest fish. In relation to medicinal and culinary plants, her catalogue is large. To tobacco, indigo* and hemp, which once were staple commodities; fruits and esculent vegetables that everywhere meet the eye, and other productions which minister to the comfort or necessities of her people, it is needless, in this place especially, to direct your notice. So remarkable, indeed, is her topographical condition, that wheat and the sugar-cane grow profitably side by side; and the orange and the olive ripen under the provident care of the same family of cultivators, who extract the saccharine matter of the maple, but essay in vain to secure the maturity of the native corn of America.‡

To comprehend this subject in all its relations a more detailed examination is necessary.

I. South Carolina is most favorably situated,§ not only with regard to the states of the Union, but to the other portions of the globe. Midway between the frozen regions of the north and the burning heats of the tropics, in her climate, seasons and productions, it has been justly represented that she enjoys most of the advantages of all. If we except tropical fruits, to which frost is fatal, her capacity successfully to rear all the grains, fruits and esculent roots, which enrich more southern countries, is nearly certain. Her latitude for cotton enjoys an extraordinary advantage. Much further south, the forcing nature of a vertical sun develops the plant too rapidly, thereby running it into weed and

* Except in Orangeburg, where it is still a source of profit to a few planters, indigo is nowhere grown in South Carolina. That it is not inferior to that of India, has, I understand, been recently proved.

† Wheat is cultivated in the state, with advantage, as low as N. L. 32° 30'.

‡ From bleak, cold winds, the northern side of the glassy mountains, it is said, will not produce maize.

§ Between 32° 4' 30" and 35° 12' north latitude, and 1° 30' and 6° 54' west longitude from the capital at Washington; or 78° 25' and 85° 49' west longitude from Greenwich.

foliage;—it is, from the same cause, most exposed to the ravages of the caterpillar and other insects. Further north, the season is too short to mature an abundant crop of balls, while the staple degenerates, and becomes less valuable.

From the Sea Islands, the best cotton known to commerce is exported. So circumscribed are the limits in which it can be grown, that a half degree ($32^{\circ} 10'$ to $32^{\circ} 40'$ north latitude) of the sea-coast of North America, seems to be the precise point where the length, strength and firmness of the fibre are most happily blended. In reference to rice, our state enjoys almost a monopoly.

2. South Carolina includes 30,213 square miles, or 19,435,680 acres. Of this area, there is as little land in one body, the highest authorities* assure us, unsusceptible of remunerating culture, as the United States can furnish. Undistinguished by mountains, with their agricultural disadvantages, it is worthy of remark that the spurs that make out from the great range which separates the waters falling into the Atlantic Ocean and into the Gulf of Mexico, are capable of profitable tillage to their very summits.

3. As a difference of twelve degrees of latitude exists between the western and eastern hemispheres, the countries of the latter which are subject to the same atmospherical influences with South Carolina, comprise the most delightful and fruit-bearing portions of France, Italy, Turkey in Europe, Russia, Tartary, and China.

4. Between the primitive and alluvial formations, the state is nearly equally divided. The soils, though of every kind, may be said to comprehend six varieties,† each the best suited to a certain crop, yet all of them capable of advantageously producing three-fourths of the vegetable products grown in its limits. While local differences are every where observable, the surface and soil of the upper districts present a great similarity; and this is equally true of the lower country. In the former, the lands are broken and hilly; in the latter, level; oak is the natural growth of the one; pine of the other. Clay is the soil of much the larger portion of the state; and, except in the immediate vicinity of the ocean, is almost the universal substratum. A close, stiff land predominates generally in the parishes, and an open sand on the Sea Islands.

The high lands of the country, above the falls of the rivers, are naturally much superior to those of the pine-covered region,

but the alluvial bottoms of the former are greatly surpassed in richness by the river swamps of the latter. In its capacity for permanent improvement, the granite half of the state has been more highly favored by nature than the alluvial. This is mainly ascribable to the open texture, permeable to water, of its clayey subsoil, and the potash in the soil and subsoil formed by the decomposition of the felspar and mica of the granite. In a few localities, however, the depth of the substratum and its proximity to the surface, offer serious obstacles to its higher productions. These, among other causes, seem yet to be operating against the cultivation of perhaps the greater part of those peculiar soils known as the "Flat Woods" of Abbeville; those in the neighborhood of Dutchman's Creek and Wateree Creek in Fairfield; and the Black Jack lands of Chester. Deriving their fertility from the hornblende* disintegrated rocks which lie below the close clay subsoil, it would appear that steady industry, incited and directed by ordinary skill, was alone wanting to preserve and perpetuate the uncommon productiveness, which, in spite of long-continued and improvident tillage, still distinguishes these remarkable tracts of land.

In reference to the soils of the primitive country, to one more peculiarity only, shall I now advert. Where the rocks lie horizontally, it is known that the soils derived from clay states frequently suffer from the impenetrable nature of the subsoil and the position of the underlying rocks. In the regions to which they are confined in this state, they "are all highly inclined, presenting their edges to the surface and allowing the water to percolate between the strata."

5. The swamps, covering 2,000 square miles of land of inexhaustible fertility, are capable of thorough and economical drainage, and conversion into active and available capital.

The pine lands, embracing about 6,000,000 of acres, constitute the most neglected section of the state. While in some quarters, they are erroneously regarded as valuable only for the abundance and quality of their timber, in others, the belief is equally unsound, that their productive capacity is limited to plants which flourish solely in a thin and feeble soil. That, in all its relations, it is a district of country of immeasurable value to our community, will hereafter be attempted to be shown.

6. South Carolina is most bountifully supplied with water. The base of her triangular form is washed by the ocean, and one of her lateral sides rests on a river accessible to vessels more than one-half its

* Messrs. Ruffin and Tuomy, late agricultural surveyors of the state.

† 1. Tide swamp, now appropriated to the culture of rice; 2. inland swamp, to rice, cotton, corn, peas, &c.; 3. salt marsh, to long cotton; 4. oak and pine, to long cotton, corn, potatoes, &c.; 5. oak and hickory, to short cotton, corn, &c.; 6. pine barren, to fruits, vegetables, &c.

* Hornblende contains about 12 per cent. of lime, and about 30 per cent. of iron.

length, and small boats 100 miles beyond. Many bold and navigable streams, with numerous tributaries coursing through her territory in every direction, disembogue into the Atlantic at distances from each other the most suitable for the purposes of intercommunication and traffic. Before reaching the point where all traces of their distinctive character are lost for ever, by united contributions, they form a bold channel between the main land and the Sea Islands the entire width of the state. Apart from the creeks and inlets of the sea, there is now an inland navigation equal to about 2,400 miles.

7. Greenville is the only division of our domain without the benefit of navigation. In all the districts, however, water courses abound, which afford remarkably eligible sites for mills. The rocks cross the streams nearly at right angles, and hence form a series of natural dams across their beds, and make falls that vary from five to eighty feet in comparatively short distances. In perhaps no equal extent of territory are there so many advantages of this sort presented.

In connection with this subject it is proper to add, that the metropolis of the state is only seven miles from the ocean; that its harbor is spacious, well protected from storms, and at all times accessible.

8. Surprising to many as may be the declaration, South Carolina, in reference to her whole population, is a very healthy country, and by no means a sickly one with regard to her white inhabitants. If the alluvial region, and a few of the middle districts are subject to fevers in summer, the whole state in winter is comparatively exempt from the diseases to which more northern climes are peculiarly liable. The assertion, too, is with entire confidence made, that, even during the hot months, in perhaps one-half of her limits, foreigners may reside not only with impunity, but with renovated constitutions. In the neighborhood of every locality in which mephitic exhalations show the fatality of their power, there are sites for settlements where vigorous health, under the ordinary safeguards, is always secured. The entire sand-hill country and pine lands generally, as well as our towns and villages, furnish the most signal evidence of the salubrity of their atmospheric influence. It may here be appropriately observed that, while from causes, several of which are among the arcana of nature, the lower division is becoming gradually but steadily healthier, a portion of the middle zone is decidedly more liable to maladies of a fatal character. If a better system of drainage and other improvements in the cultivation of the ground, do not satisfactorily account for the one, certain agricultural practices are perhaps sufficient to explain the other. For the diseases which occasionally clothe, in the habiliments of

mourning, the people of Abbeville, Union, Chester, and York, it is supposed that the planters of those districts are competent to the diminution of the sources whence they spring. It is not unworthy of especial remark, that the atmosphere of the swamps and marshes, so poisonous to the white man, is at all times innocuous to his slave. If it were not for this merciful provision of an all-wise Being, the alluvial region of South Carolina, in the immediate vicinity of its water courses, would soon become a dreary waste, and tenanted only by the beasts of the forest.

Of the cities of the Union, Charleston, and, it may be added, Columbia, show a lower mortality among their *acclimated* inhabitants than any others. With regard to the former, the number of deaths from all fevers (the epidemic of the state), except from yellow fever, for the last eighteen years, is 656, and in any one year 81, in a population of between 30 and 40,000. From yellow fever, which has prevailed as an epidemic but twice in twenty-two years, for the same period, the aggregate number of deaths is 646. The average mortality for the last six years, all classes included, is 1 in 51; blacks alone,* 1 in 44; white alone, 1 in 58.†

9. The natural means of resuscitating the soil are abundant, and widely diffused. A large portion of the lower country shows exhaustless beds of the richest marl. Limestone, though obtainable only in York, Spartanburg, Laurens, and Pickens, exists in such quantities in the first two districts, that, by railway communications, the entire primitive region will, at no distant day, be furnished with this earth, so essential to the nutrition and development of plants. While the seashore parishes possess unfailing supplies of salt mud, salt grass, and shell lime, two-thirds of the state are most amply furnished with swamp mud and peat.

* "In Charleston," says De Bow's Review of May, 1847, "the mortality under 5 years is 31 per cent.; in Boston it is 46. There are more deaths in Philadelphia, from all fevers, including typhus and malarial, than from all fevers in Charleston, including yellow fever. From 1820 to 1830, in Philadelphia, the deaths from fevers were thirteen and five-tenths per cent. on all the deaths. In Charleston, for the last eighteen years, including two epidemics, the average mortality from fevers was eleven and four-tenths; leaving out yellow fever, which attacks almost exclusively strangers, the mortality from other fevers will not be found to exceed seven per cent.

† It appears from tables furnished a writer in the Commercial Review, by Dr. G. Emerson, that the average mortality in Philadelphia, among the *colored* population, from 1821 to 1840, inclusive, was one in twenty-six; in Charleston, we know that for that time it was one in forty-four. In Boston the average mortality, it is said, (see writer in Boston Medical and Surgical Journal, November, 1842,) is one in fifteen. Why, in reference to the colored population, have vital statistics ceased to be published at the North? Let the abolitionists answer.

10. Of minerals and the primitive rocks, the number of the former is 28; of the latter, 9.

11. The botany of the state consists of about 3,000 species of plants; of these, 2,000 are flowering, and 1,000 unprovided with flowers as parts of their organs of fructification. In relation to the former, about 65 are naturalized; that is, *foreign* plants, introduced and now growing *wild*. There are about 150 grasses, of which 15 are natives; 30 species of esculent, (for man,) of which 3 or 4 are naturalized; and about 70 more used in medicine, agriculture and the arts, of which five or six are naturalized.

12. As a member of the Union, South Carolina in population occupies the eleventh rank; in territorial extent, the twenty-second; in the value of her *agricultural* exports, the fifth; in the value of the goods, wares and merchandise of the growth, produce and manufacture of the United States,* the thirteenth.

The very large contribution of this state to the national wealth, which is determined by the amount and value of her domestic exports, and not her imports,† comes, too, from a limited part of her soil. The estimated number of acres in cultivation in 1820, was 1,221,000; at present it does not

exceed 2,000,000, or about one-tenth of her *arable* lands.

12. Taking the census of 1840 as a basis of calculation, South Carolina produces, *communibus annis*:

Cotton.....	lbs. 61,710,274
Rice.....	60,590,561
Sugar.....	30,000
Wheat.....	968,354
Oats.....	1,486,208
Indian corn.....	14,722,805
Rye.....	44,738
Tobacco.....	51,519
Wool.....	299,170
Tons of hay.....	24,618
Potatoes.....	2,698,313
Silk cocoons.....	2,080
Barley, buckwheat, hops, and wax.....	19,989
Value of lumber produce.....	\$537,684
Barrels of tar, pitch, turpentine and resin.....	735

If we divide their income, about \$31,000,000, by the whole population, 594,398, the share of each is \$52; of the white population alone \$119. Of rice, wheat and potatoes, the quantity per head is 108 lbs.; if one-half of the amount of Indian corn be added, the quantity of bread food per head, omitting inferior productions, is 120 lbs. Of cotton and wool, the share to each inhabitant is 104 lbs. If the white population be divided into families of 4, (64,777,) there will be of horses and mules, 2 to each; of meat cattle, $8\frac{3}{4}$; of sheep, $3\frac{3}{8}$, and of swine, $13\frac{3}{8}$. In reference to the whole population, the proportion of each, in meat cattle, sheep and hogs, is about $2\frac{3}{4}$. Supposing three-fourths of the white families (48,582) to be engaged in agriculture, and that 2,000,000 of acres are in cultivation, each family tills 41 acres, and realizes \$476, or \$11 60 an acre.

SAVANNAH, GEORGIA.—Our immediate object in this article is to institute a brief inquiry into the present condition of the trade of the city of Savannah; to examine some of its peculiar advantages for a general and flourishing commerce, both foreign and domestic; to survey for a moment those rich portions of country that in all probability will ere long become tributary to her commercial greatness; also to cast a glance over those numerous avenues and intersections that already in their downward course to the ocean are seeking a resting-place in Savannah.

This city may claim for itself that happy medium of climate—that *juste milieu* of temperature that quickens without enervating—that enjoys the crescent power of the tropical regions, without their noxious influences. Situated on the thirty-second parallel of north latitude, and eighty-one degrees west from Greenwich, it enjoys a winter climate which, for softness and genial comfort, is unsurpassed if not unequalled. Its proximity to the Atlantic (distant but seventeen miles,) brings it within the reach of the refreshing sea-breezes, which temper the fervors of a summer solstice with a renovating coolness.

* EXPORTED FROM CHARLESTON IN

1820.....	\$8,690,539	1834.....	\$11,119,565
1821.....	6,867,515	1835.....	11,224,298
1822.....	7,136,366	1836.....	13,482,757
1823.....	6,671,998	1837.....	11,138,992
1824.....	7,833,713	1838.....	11,017,391
1825.....	10,876,475	1839.....	10,318,822
1826.....	7,468,966	1840.....	8,990,048
1827.....	8,189,496	1841.....	8,598,257
1828.....	6,508,570	1842.....	8,091,542
1829.....	8,134,676	1843.....	7,010,631
1830.....	7,580,821	1844.....	8,578,515
1831.....	6,528,605	1845.....	8,366,250
1832.....	7,683,833	1846.....	8,284,405
1833.....	8,337,512	1847.....	7,763,038

The value of the exports from 1840 to 1847 inclusive, has been furnished by the Hon. W. J. Grayson; the information for the previous years is extracted from De Bow's Commercial Review.

† DUTIES RECEIVED IN CHARLESTON FOR THE YEARS

1834.....	\$467,000	} year of speculation and high prices.
1835.....	464,000	
1836.....	701,000	
1837.....	474,000	
1838.....	590,000	} year of high prices.
1839.....	640,000	
1840.....	300,000	
1841.....	340,000	
1844.....	490,000	
1845.....	390,000	
1846.....	280,000	
1847.....	387,000	

The years 1840 and 1841, remarks the Hon. W. J. Grayson, (collector,) are omitted, the record in the office being incomplete. The first and second quarters of 1840 amounted to \$192,000, and the last quarter of 1841 to \$116,000.

The Savannah River admits vessels drawing fourteen and a half feet of water to the wharves of the city; and it is but seldom now, in this age of improved models, that any freighting ship, at least of American structure, is compelled from want of water to stop short of the city. When this is the case, however, (and this happens more frequently with foreign ships than our own,) Four Mile Point offers a safe and commodious anchorage, where vessels of almost any draught may load and unload. The water of the river at this point is still fresh and fit for all alimentary purposes. That destructive marine insect so fatal to vessels in salt and brackish water, the sea-worm, so called, is unknown in this river, and should it have gained a lodgment in the bottom of a vessel previous to her entrance into these waters, a very short time is only necessary for the fresh water to destroy them. At this point, also, ships take in their water at low tide for their voyage. The Savannah is navigable for the most part of the year for steamboats of moderate draught to Augusta, two hundred and forty miles above the city of Savannah.

The early history of Georgia shows that Savannah was then counted a place remarkable for its healthy location. Built upon a bluff of pure sand forty feet above the level of the river, it seemed for a series of years to have enjoyed a singular and happy immunity from all acute and fatal diseases. We read in the early annals of its settlement, that it was resorted to by invalids and men of leisure during the hot summer months, both for health and pleasure.

In process of time, however, as population increased, and agriculture and the clearing of the lands in the neighborhood of the city progressed apace, mephitic and unhealthy influences were developed, and Savannah lost caste for a while, but only for a while, as a healthy city. When it is remembered, that with the influx of foreign population, ill adapted, from exotic constitutions and frequently from lax habits, to the warm climate of this parallel of latitude, came in also debilitating and often fatal diseases, it may well be questioned whether its ill health arose so much from local as from imported causes. Time and circumstances, however, have wrought another change, and what with the draining of contiguous lands and judicious municipal regulations, and the introduction of a better style of living both as to houses and food, and the greater adaptation of system to climate, and the gradual exhaustion of those deleterious influences brought into existence by the original turning up of the soil, exposure by the cutting down the sheltering forests from around the city; what with these causes, we say, and what with the perpetual though gradual, constant, though almost imperceptible rotation of all climates and temperatures, Savannah has again put forth her pretensions,

and is now universally allowed to be as healthy a city as any in the United States.

The graver portion of our prescribed task remains to be considered, namely, the advantages that Savannah presents to the man of business, the man of unappropriated capital, seeking for its most profitable investment—the young man of enterprise, rich in stores of industry and knowledge of business, looking anxiously around him for a location in which he may bring forth his talents and his industry to best purpose, the sturdy mechanic with his ever ready hand, watching for a place where his labor may be remunerated with a comfortable subsistence; and we have not yet named the ship-owner, we have reserved him until now purposely, for he is an important item in our account. The immense amount of produce that is booked in the page of human certainties to find an exit through Savannah to some market by water, either foreign or domestic, must with a moral certainty invite to this port the unemployed ships of the North, and that is saying a good deal; for the North have a greater propensity for building ships than we have for their employment.

Our pine forests gradually disappear, they float away North, they are re-edified, they return to us in the form of stately ships. That gigantic tree that the persevering cutter has with so much labor “totted from its base,” and brought to our market—that mighty tree, “meet for the mast of some tall admiral,” has vanished, and where is it? It is in yonder floating structure; it has regained its original and dignified perpendicularity; it is the mast of a ship of one thousand tons; it has come to assist in transporting our produce to a foreign market. Thus our own children labor for us; thus our own products assist us to export our own products.

The position of Savannah in relation to other and surrounding states is a mark of nature's favor, and must in time place her high in the scale of commercial eminence. Florida, on the south, with her shallow streams and incompetent harbors, cannot choose but seek, through her valuable inland passages from Savannah, a larger portion of her foreign trade. The rail-roads commencing at Savannah, and reaching on to the west for the space of three hundred and eighty-three miles, traversing regions of endless variety of products, will soon attain to the Coosa and Tennessee rivers, a distance of four hundred and thirty miles, uninterrupted except by a single portage of inconsiderable length, at Macon; and this link will doubtless be supplied ere long, and one vast chain stretch its formidable and fruitful length from the waters of the Tennessee to the waves of the Atlantic. The same point, viz., the Tennessee River, is reached by another element and other regions, untouched by the first line, find an easy and practicable channel for their trade by the means of the Savannah River to the city of

Augusta, two hundred and forty miles; steam again takes up the line of march from the latter point for three hundred miles, to the Tennessee. The citizens of that state, no longer idle spectators of these efforts of their brethren of Georgia, are arousing themselves to the work, and give good promise of taking up the line where Georgia has left it, and carrying it to their capital. Pursuing this route, we arrive at the banks of the Cumberland, and following its course we are conducted to the flourishing city of St. Louis, but twenty miles below the mouth of the Missouri, and thus obtain in the valley of the great West the prize for which the Atlantic states are contending with so much industry and perseverance. Returning once more to Savannah, we ascend the Central Rail-road throughout its whole length, one hundred and ninety miles, and passing up the Macon and Western road, a distance of forty miles, we come to Barnesville, a point whence the most important road in the southern country must inevitably branch, and thus conduct the great tide of southwestern travel to a point from which Savannah is the nearest Atlantic city,—this latter road reaching Columbus lays open to the same favored emporium the rich cotton regions of Alabama. That this splendid work, when completed in all its branches, will draw naturally into the same current a large portion of the trade of North Alabama, North Mississippi, East Tennessee, and part of West Tennessee, can scarcely be doubted by him who has a map of the country before him and is capable of tracing the various routes and roads upon it, and observing their connection, and to that capacity adds the important acquisition of experience in the past operation of similar causes.

What Savannah has so long been contented to forego for want of facilities of transportation, must inevitably be hers when the great line of road communication is completed. And so pressing and powerful is the impetus of a mighty and growing trade in all these regions through which we have conducted the reader, that the result is inevitable; no possible state of things or chain of circumstances, however adverse, can delay it long.

Again, Savannah puts forth her feelers through the waters of the Ocmulgee to a point on that noble stream where terminates the already graded rail-road from Albany, near the centre of the great cotton region of Georgia, a region based on the immense shell, lime and marl formation which runs through so great a portion of the southern states.

Another route of equal importance, and promising equal if not greater advantages to Savannah, is one already much talked of and by many much desired, and one which at some period not very distant, must in the very nature of things be constructed;—we mean the natural and direct continuation of the Central Rail-road from Macon to Columbus. It is

easy to foresee the consequences of such a route to Savannah, and difficult to perceive the vast local interests that are naturally enlisted in favor of this route over all others, for a crossing of the state of Georgia. Such a route, when completed, can result in but one consequence, namely, that of rendering the whole country between the Ocmulgee, Flint and Chatahoochee rivers, the natural allies and tributaries to the trade of the Atlantic city of Georgia.

From this irregular and desultory sketch we perceive the vast prospective trade of Savannah; we view our hundred rail-roads, for we must call those roads hers that conduct a mighty stream of commerce to her bosom; we see her navigable and swift-flowing rivers, whose downward water bears the treasures of three fertile states to her wharves.

From the unfinished and somewhat undetermined condition of the various lines of internal improvement in the several states of which we have been speaking, it will readily be seen that no very exact calculation can be made as to the period when they shall, as one grand system, united though distinct, tending all to one point, though measurably unconscious of their destination, conspire to produce those commercial consequences to Savannah of which we have been speaking. It may also be imagined that the aberration of purpose consequent upon the opposing influence of so many sectional interests, may for a while protract, though it cannot long prevent that almost uniform concentration of trade to the one most expedient point, the city of Savannah. Individual influence, seconded by the magic of wealth and strong effort, may for a while divert the course of trade unto unnatural channels; but trade, like material bodies, is ruled by attractive laws, and the great magnet will be ever the one constant principle—self-interest; wherever this principle can be clearly discerned the tide of trade will follow.

If, as we have attempted to show, the natural and most expedient and the most easily reached market for the vast products of the south and west, shall be Savannah—Savannah will be their destiny in spite of opposing interests, however cunningly and perseveringly arrayed these adverse interests may be. Savannah, once the centre of all the commerce which her position and the tendency of circumstances will most certainly entitle her to, her export trade must, by a parity of reasoning, be proportionately increased, both domestic and foreign, and this increase of business products will naturally beget a uniform and progressive increase of capital and enterprise; when these two great partisans in the strife for wealth unite their forces the triumph is complete. Savannah exported during the commercial year of 1843,

285,754 bales of cotton; 25,032 tierces of rice; 7,500,000 feet of pitch pine lumber; 5,175,000 cypress shingles; 66,000 oak staves. The direct foreign import for the same period amounted only to \$279,896, but as a great proportion of the articles of foreign import consumed in, and transmitted through Savannah, arrive coastwise from New-York and other northern cities, it is difficult to form a calculation from any very certain data what is the actual value of the aggregate, direct and indirect, foreign imports of Savannah, blended as the latter are with the coastwise imports during the period of which we have been speaking, viz., 1843. The registered, licensed and enrolled tonnage of the port of Savannah amounted to 17,920 tons, but the total amount of all tonnage frequenting our port cannot be readily arrived at, since most of the vessels engaged in the coasting trade sail under licenses which exempt them from entry or clearance at the Custom House, except when they have foreign goods on board. Leaving the amount of tonnage, thus arriving and departing without official notice, to conjecture, we will proceed to refer to some data concerning recorded arrivals and clearances at the Custom House, from which will be seen, by comparison, what the whole might probably have been. From the 1st of October, 1844, to the same month in 1846, there entered coastwise the port of Savannah 719 vessels, comprising an aggregate tonnage of 196,791 tons, and during the same period, from foreign ports, 26,612 tons of American shipping, and 78,476 tons of foreign, by which enumeration a curious fact is brought to light, namely, that the foreign carriers of our own products outnumbered the native, in a ratio of three to one! The total amount of tonnage of all descriptions entered at the Custom House of Savannah during the two years last named was 105,083, and the total amount cleared for the same period was 133,915; the difference between these two sums arising in part from vessels remaining over in port at the commencement of the year with which we begin our calculation, and in part from vessels arriving coastwise with license, taking foreign freights and exchanging their licenses for registers, and thereby in clearing obtaining a record on the Custom House books. The value of foreign goods passing through the same channel, and for the same period, subject to duty, amounted to \$310,255 39, while those not liable to duty, though of foreign import, amounted to only \$19,915 21; of specie for the same period, there was an import of \$65,423 86, making a grand total of foreign imports into the city of Savannah for the two years ending on the 1st of October, 1846, of \$595,594 50, while the value of domestic produce exported to foreign places arrived at the important sum of \$7,353,186 86. If we

add to this latter sum the value of the coastwise exports for the same period, which could not have been a less amount, we have nearly fifteen millions of exports for the two years.

It must be kept in mind that during these two years Savannah had scarcely begun to feel the effect of the internal facilities of transport. To what a point, then, may we not reasonably expect her trade to arrive, when the numerous avenues completed in progress, and contemplated, shall be directed to one common centre, and Savannah be the grand depot of all. The central rail-road is destined, *cæteris paribus*, to accomplish for Savannah what the Erie Canal has done for New-York, accomplishing the prediction of General Bernard, who, after carefully examining and weighing all the local advantages of this city, exclaimed, "Savannah is destined to be the New-York of the South." If heedful exertion and liberal means are put forth these things must eventually come to pass. We had almost said that such a result would ensue from unaided natural causes, exertion and enterprise sleeping the meanwhile, but this is saying too much and hoping too much; we only mean to imply, by a strong figure, that the descending stream of trade only wants direction. It is but required of the merchants and men of capital to use the ample powers that circumstances have placed in their hands to give this direction. Savannah must not, however, imitate the rustic in the fable, who waited on the banks of the river for the waters to flow by, but rather dash on with bold step, and force the stream at every practicable ford, and where there is no ford, to call on their ingenuity and enterprise to make one. In proportion to the facilities of transport will be the augmentation of products; this we venture to assume as an incontrovertible position, and every new water communication, and every new rail-road opened through the state will cause thousands of hitherto uncultivated acres to start into life and fruitfulness.

The present year, although the first since the rail-road has penetrated to the Cherokee country, affords striking proof of the truth of our theory, as exemplified in the increased value of the commerce of Savannah. The exports of the month of February, 1847, exceed those of the same month last year, by \$839,477 75. In January of the present year our exports have amounted to \$1,038,954 41, while the same month in 1846 exhibited but \$262,124 52, an increase of \$776,829 89 in the one month of January, and a total increase in the two first months of 1847 of \$1,616,307 14; this enumeration is exclusive of the coasting trade. We do not wish to conceal the fact, nor would it help us to do so, that a portion of this increase has arisen from the greater value of our staple products, the cotton and rice crops

of Georgia the past year over that of the preceding. While we are speaking of this grand staple, it occurs to us to advert to the vast prospective increase in the cultivation of cotton in Georgia, as road after road pierces the numerous rich and fertile counties through which they must necessarily pass. The rail-road is at once the plow and the seed, the planter and the carrier; wherever its course leads through the hitherto trackless regions of our state, energy is awakened, industry stimulated and enterprise excited in the highest degree. As our rail-roads have but just reached the great grain country of the state, we cannot expect that important article of trade to have been much augmented in quantity as yet, but the lapse of another year will show, in all probability, a result that will carry with it the conclusion that Georgia will ere long number grain and flour among her most important exports. Cass county and the regions adjacent, are fertile and immediately contiguous to the western and Atlantic rail-road, the natural feeder of the Central rail-road. They will, doubtless, become the granary of Lower Georgia, and after supplying all the domestic wants of the state, will ship their surplus to foreign countries, through Savannah. Those counties through which the state road runs are subject to peculiar temptations—two markets are placed before them of nearly the same facility of access. On reaching Atlanta, two roads of nearly equal length invite their attention, and await their decision. Shall they pursue the path to Augusta and thence by the Hamburg road to Charleston, or is their patriotism enough to turn the almost equal scale? No such thing; patriotism has nothing to do with such matters. Trade is governed by its own laws, and so is the *amor patriæ* of the present day. It follows, then, that the owner of the produce, who probably accompanies it to market, will be swayed by motives of interest; if he finds the facilities offered on the Western and Macon and the Central roads superior to those of the Georgia and Hamburg roads, Savannah will enjoy the fruit of his labors, all other things being equal. It must be the study of the presiding powers of the Central and Western roads to cultivate this result by good smooth tracks, plenty of cars of burden, and moderate rates of freight—the latter *should* be so modified, and doubtless will be so, ere long, that a barrel of flour can reach the Savannah market at an expense of twenty-five per cent. less than it would pay to Charleston.

The lumber business of Savannah has hitherto been an almost unnoticed item in the history of its exports, but it is now too well grown to be kept out of sight. It has become a trade of very considerable importance, and employs constantly more than two

hundred vessels of all sizes; Europe, the western islands of the Atlantic, the West Indies, all of the middle and eastern states of the Union, are its customers. Nay, even the Celestial Empire itself has been found to be a market for it.

The yellow pine of Georgia, the *pinus australis* of Michaud, is confessedly the most valuable, because the most durable and the most beautiful of all the resinous woods for the purpose of structure. It differs from the pine of the same name of North and South Carolina in many of its features; the most striking one is its grain, for so the various laminæ, or concentric circles that compose the tree, are called. The grain of the Georgia pine is much closer and finer than that of either of the other states, and the resinous matter with which all pines abound is more firmly incorporated with the wood, and less easily extracted by water or climate. So long as this vital principle of the wood is retained, the wood itself, if free from sap, is incorruptible; but when, from conspiring elementary causes, this natural aliment is parted with, (and this is soonest the case where the grain is coarse and the laminæ far asunder,) a space is left open to the alternations of air and moisture, and these are the harbingers of decay. It has been objected by some that this theory is not sustained in the case of pine continually covered with water, such being known to remain sound for more than half a century. We answer that this case is not in the nature of an objection to the theory, inasmuch as it is not embraced in the position laid down; it is the alternations of air and moisture, of wet and dry, that cause the pine, and we believe most other woods of open texture, to decay. Neither is another instance, where pine is kept entirely dry, and so continues sound for as long a period as that continually covered with water, any more at variance with our theory.

The durability of Georgia pine, in either of these predicaments, is greater than that of most known woods. It enters largely, as before remarked, into the construction of vessels, and is used by northern ship-builders in many parts of their business. It composes the flat of the bottom, the wales, water-ways, plank sheers, beams, and indeed almost the entire between-deck work of the finest ships of our country. It is also used for keels, lower masts, top-masts, bowsprits; and for the interior work of the lower hold of ships, such as clamps, ceilings, and thick streaks, it is much preferred. The between-decks of a ship, when carefully finished with this wood, and well varnished, has a showy as well as a substantial appearance, and such a finish has become much the fashion within a few years. To the great demand for this wood for ship-building, we may add that

which is created by its natural fitness for all purposes about machinery, where wood is used at all; also the universal demand for Georgia pine throughout the United States for floors, and many other purposes among housewrights. England imports from the State of Georgia, through the port of Savannah, at least twenty cargoes of three hundred thousand feet each, superficial measurement, per season; and when cotton freights are very low, the ratio of pitch-pine shipments is greatly increased.

An agent of the British government, some few years ago, after exploring the pine regions of the southern country, from Virginia to Louisiana, pronounced the yellow pine of Georgia to be superior to anything of the kind in the United States. This opinion seems also to have been fully entertained by the contractor for the French government, who located himself in this state after a long and critical search after the best pine of the country. The West India Islands, both British and French, take off vast quantities of Georgia pine every year, for which they pay in their own products, and in specie and bills of exchange.

With these important outlets for the lumber trade of Savannah, and with the constantly increasing demand for the article, we need not be surprised to find the exports of it, in ten years, more than quadrupled. The Savannah and Ogeechee Canal, connecting the waters of the two rivers that give name to this work, and now nearly restored to a navigable condition, is destined to be the principal channel through which the lumber trade of Savannah is to be increased to a very great extent, so much so that it may soon bear a very respectable comparison with the two great staples of the state, cotton and rice.

It remains to say a few words concerning the probable increase in the product of this last-named important article of food. The very high prices obtained by planters for their rice the present season, will in all probability excite many to a much more extensive cultivation of the article in future years. The introduction of machinery for threshing, cleaning, and preparing rice for market, has much facilitated the trade, and has sent it abroad in a much fairer and more perfect condition, both as to grain and quality.

Georgia rice may now be said to vie with, if not to excel, any other in the world. The inducements for cultivating it being increased by three important causes, viz.: increased value in market, facility of transportation, and foreign demand, it is not assuming too much, perhaps, to say that the rice crop of Georgia, centering in Savannah, will in the coming year exceed by 34,650 casks the crop of the past year, 1846. The cotton crop of this state, as before remarked, must be greatly increased by the cause we have mentioned, viz.: the improved demand, and facilities of transportation; that this entire crop of more than three hundred and fifty thousand bales, together with a respectable portion of that of Alabama and East Florida, may, by proper exertion, all be secured for the benefit of the commerce of Savannah, can scarcely be doubted by any one acquainted with the simplest elements of cause and effect.

The connection of Augusta with Savannah by a rail-road from the Eighty Mile Station on the Central Rail-road, running through Burke county, and having its first terminus in Wanesboro', was a favorable idea for the interests of Savannah. It will remove beyond temptation the products of two or three counties that now lie more convenient to Augusta than to Savannah. It is not to be supposed that internal improvements in and about the State of Georgia will cease when all these roads we have named shall be completed; it is not in the nature of things that such should be the case; on the contrary, road will beget road, and track intersect track, until the entire state shall be brought into intimate union, not only with itself, but with its neighboring states, and thus gradually bring about the consummation so desirable for Savannah and so necessary for her commercial eminence.

In this diffuse and irregular sketch of the present position and future prospects of the trade of Savannah, we have not aimed at tabular exactness, for it was difficult, with such materials as we had before us, to be very methodical; it was our design only to shadow forth, as it were, some of the strong features of the subject, and leave to time and the accumulation of more certain data, the completion of the intention.

SAVANNAH—COMMERCE OF.

EXPORTS FROM SAVANNAH OF COTTON, RICE, AND LUMBER, FOR TEN YEARS, AND VALUE REAL ESTATE.

Years	Total bags Cotton	Total lbs. Cotton	Total tres. Rice	Total feet of Lumber	Value Real Estate
1825	137,695	49,570,200	7,231	—	—
1826	190,578	68,608,080	11,455	—	—
1839	190,176	71,703,360	21,332	—	—
1840	284,219	102,329,640	24,392	—	—
1841	147,280	53,020,800	23,587	14,295,200	—
1842	222,254	81,011,444	22,064	8,390,400	—
1843	280,826	101,097,360	26,281	7,518,750	\$2,853,900

EXPORTS FROM SAVANNAH OF COTTON, RICE, AND LUMBER—*continued*.

Years	Total Bags Cotton	Total lbs. Cotton	Total tns. Rice	Total feet of Lumber	Value Real Estate
1844	244,575	90,492,650	28,543	5,933,251	3,245,827
1845	304,544	115,726,720	29,217	8,270,582	3,279,988
1846	186,306	74,522,400	32,147	18,585,644	3,306,734
1847	234,151	98,343,420	31,739	10,083,449	3,462,073
1848	243,233	104,590,190	30,136	16,449,558	3,600,000

RECEIPTS OF COTTON AT SAVANNAH, FOR TEN YEARS, TO 1ST SEPTEMBER.

1838	206,048 bales.	1844	243,420 bales.
1839	196,618 "	1845	305,742 "
1840	295,156 "	1846	189,076 "
1841	146,273 "	1847	236,029 "
1842	228,396 "	1848	391,372 "
1843	299,173 "		

SAVANNAH.—The total population in 1810 the total population was 5,195; in April, 1848, was 13,573, being an increase of 2,359, or 21 per cent., since 1840. In 1820, 7,523; 1830, 7,773; 1840, 11,214. Increase in 38 years, 161 per cent.

In the thirty years ending 1840, Charleston increased	18 per cent.
or, including the Neck or suburbs	66 "
Philadelphia increased	137 "
Boston	151 "
Baltimore	187 "
New-York	224 "
New-Orleans	492 "

Since 1840 the whites in Savannah have increased 230, the colored 18 per cent.; and in every 100, the former are now 54, the latter 46. There are 1,702 wooden dwellings, and 223 brick; 17 wood and 265 brick storehouses. One-fifth of the houses are owned by the occupants; of the male adults about two-fifths are of foreign birth.

COMMERCE.

Exports, 1825, cotton to foreign ports,	64,986 bags;	72,789, coastwise.
" " rice	2,154 tierces;	5,081, "
" 1826, cotton	108,486 bags;	82,094, "
" " rice	4,978 tierces;	6,478, "

In 1839 the total export of cotton was 284,249; rice, 24,392; 1841, cotton, 147,199,176; rice, 21,332; in 1840, cotton, 280; 23,587 rice; 14,295,200 feet lumber.

EXPORTS, YEARS ENDING SEPTEMBER.

	1842.	1843.	1844.	1845.	1846.	1847.	1848.
Cotton to foreign ports	142,386 bags	193,099	130,964	182,073	77,852	119,321	55,801
" coastwise	79,868	87,27	113,611	122,471	108,454	114,630	70,293
Rice to foreign ports	5,933 tierces;	10,675	10,307	11,712	5,025	10,218	7,410
" coastwise	16,131	15,606	18,236	17,505	27,122	21,521	15,548
Lumber to foreign ports	5,919,400 feet	5,532,750	3,034,064	3,333,646	13,365,968	4,886,425	5,544,563
" coastwise	2,471,000	1,986,800	2,899,187	4,936,936	5,219,676	5,814,960	—

In the year ending 1st April, 1848, Savannah exported to foreign ports 60,037 bushels corn; 412 bbls. turpentine; 30,000 yards osnaburgs; and imported 224,645 bushels salt; 374,992 gals. molasses; and \$62,569 in iron, pig and bar. The number of vessels arriving in the same time were, from foreign ports, 41; and 6,925 tonnage; coastwise, 397; 99,409 tonnage. Foreign vessels from foreign ports, 51, of 28,766 tonnage; four ships with tonnage ranging from 572 to 721, are owned in Savannah, either in whole or in part; 1 bark, 6 brigs, 18 schooners, 9 sloops, 19 steamboats.

In the ten years ending 1820, the average of deaths was 1 to 14; of average white population, in the ten years ending 1830, 1 in 17; ending 1840, 1 in 24; ending 1848, 1 in 33; a most marked improvement. The records of the black population, though preserved in the registers, are unfortunately not given in Mr. Bancroft's pamphlet, to which we are indebted for the above statements.

"The growing population—the great increase of the mechanical arts—the extended use of steam as applied to mills, presses, and other useful employments—are all evidences of a healthful state of the body politic. And this increase of steam power has been so noiseless, that it has attracted the notice of but few of our citizens, and most of them will be surprised to learn that of the eighteen establishments propelled by steam, fourteen of them have been erected within the last ten years."

ST. LOUIS—COMMERCIAL ADVANTAGES OF.—The Hon. Edward Bates, in his oration on the inauguration of the Pacific Railroad, referred to the superior natural and commercial advantages of St. Louis in the following truthful and eloquent strains:

"Here we are, in the centre of the great valley, the natural centre of the largest body of rich, habitable land on the face of the earth. A land large enough to maintain in comfort two hundred millions of people, every one of whom could bring the produce of his labor to this centre by natural navigation. Just below the confluence of three mighty rivers—Missouri, Mississippi, and

Illinois: and just above the influx of the beautiful Ohio, whose fertile banks are already teeming with industry, enterprise, and wealth. Look at a map of the valley: its broad surface is divided into quarters, by the figure of a cross—a little irregular, to be sure, but still a cross. The Mississippi is the shaft, and the Ohio and Missouri are the limbs. And the shaft and the limbs are bristling with tributaries, each one of which is large enough to be considered in Europe, a mighty river, fit to be improved and cherished as the artery of a nation's commerce.

"Look at the map, and not the distances and the commanding points. The driftwood that floats past our city plunges in the turbid waters of the Mississippi for twelve hundred miles before it is washed by the bright waves of the ocean. The water line of commerce from Pittsburgh to St. Louis is twelve hundred miles. Your steamers go up the Missouri, without a snag being pulled out or a sand-bar removed beyond our Western border, two thousand five hundred miles. Ascending the Mississippi, they push their bows into the very foam of St. Anthony's Falls: and above those falls, I know not how many hundred miles of placid water invite the venturesome boatman to the far North. Go up the Illinois—you can find no stopping place there, for the Father of Waters is wedded to the lakes. In Illinois and New-York, the duty imposed by the great gifts bestowed upon us, is partly done; and now, by the aid of their canals, you can leave the ocean in a boat, and entering the Mississippi or the Hudson, circumnavigate the nation.

"We occupy the most important point on this great circuit. If there were not a cabin or a white man from the Ohio to the Missouri; if our forests were still in pristine solitude, and our prairies untracked, save by the hoof of the buffalo, or the moccasin of the Indian savage; I should still believe—considering the extent and richness of the valley, the number, length, and direction of its rivers, and its capacity to produce, in boundless plenty, all that can minister to the comfort, wealth, and power of man—I should still confidently believe, that the greatest city upon the continent must be established within that span's length upon the map."

ST. LOUIS, AND THE PROSPECTS OF MISSOURI.—Thomas Allen has presented an address to the directors of the Pacific Railroad Company, which has been chartered at St. Louis, with the view of a present western extension to the state line, if possible, and eventually onward in the direction of California. Mr. Allen's address is a very interesting one, and we extract those parts which relate especially to the city of St. Louis and its destinies:

"Geographically, we occupy a central po-

sition, and possess the great advantage of being at the convergence of several navigable water courses of magnificent extent, and incalculable value and importance. Nature has done much for us; and it is precisely because she has done so much, that we have not felt the necessity of doing anything for ourselves, while our neighbors, at the North and at the South of us, are making the greatest exertions to triumph over nature, and to obtain by art those advantages which nature denied them. At the same time, it is not to be denied that our relations to the navigable rivers constitute our chief natural advantage. The great majority of emigrants, farmers of small means, from the eastern states, desiring to settle in the West, not desiring to compete with slave labor, direct their steps to the north of us, while the emigrating planter, with his negroes, seeking a western home, turns his course, for the greater security of his slave property, to the south of us. Of the foreign emigration, our city has, it is true, received a very large share, and she has from that and other causes, chiefly commercial, prospered in an unexampled degree, while the interior of the state has also increased in population, but not with the same rapidity. For example, while St. Louis nearly doubled her population in four years, the counties bordering upon the Missouri river increased but about a third in the same time. But it is to be remembered that it is not alone with the interior of Missouri that St. Louis finds a profitable traffic. Divert the trade of the upper Mississippi and of the Illinois from her, and the consequences would be felt to be of serious weight. Her commercial prosperity is founded very largely, if not chiefly, upon what is called the 'produce trade.' In this trade the productions of Illinois and Iowa, and even of Wisconsin, are extensively mingled with those of Missouri. In the past year, 1849, the number of steamboat arrivals from the Upper Mississippi were 806—from the Illinois River they were 686, while from the Missouri River they were but 355. The numerous barges, keels, flat and canal boats which arrive, come chiefly from the Upper Mississippi and the Illinois. It is evident, therefore, that St. Louis traffic is more with other states than with our own. To the great productive capabilities of the country north of us, the inhabitants apply superior industry and energy. Time, in developing their resources and increasing their wealth and population, has also brought to them the disposition and perhaps the means to increase their facilities of intercourse, and to extend the range of their market. Hence we see them devising schemes of railroads to connect them with the lakes, and with the great chain of railroads which are penetrating the West from the Atlantic cities. We see railroads projected from Chicago to Cairo, from Spring-

field to Quincy, from Springfield to Terre Haute, from Peoria to Oquawka, from Galena to Chicago, from Alton to Springfield, Illinois, and from St. Joseph to Hannibal, in our own state, the cost of survey in the latter case paid for by the state—all of them, but the first mentioned, commended to the public as probable links in the great chain which is to connect the Atlantic and Pacific. On the south of us we see projected and chartered the Missouri and White River railroad, and the Missouri and Mississippi River railroad; railroads in Tennessee, reaching to the Mississippi, while our countrymen of the extreme South, aided and backed by the topographical corps of the United States, are urging forward a railroad by the Gila route, to the Pacific at San Diego, which should have a terminus upon the Mississippi, below the mouth of the Ohio. While these movements are going on around us, St. Louis is doing nothing, and proposing to do nothing, but relying confidently upon the centrality of her position, her large capital and advanced growth, and her great 'produce trade.' Those who sought a friendly alliance with her in the East, and proposed to increase the facilities of intercourse by a railroad pointing directly to her, have been denied the right of way, and our neighborly city of Alton even prohibited the Springfield and Alton railroad from touching the river bank, lest a long ferryage should give St. Louis the benefits which she hopes to appropriate exclusively to herself! What, then, with these schemes around us, against us, and avoiding us, is it, if any thing, expedient for us to do? Can we do any thing? Is it possible for us to devise a scheme which shall, by its tendency to increase the settlement of the interior of our state, to increase our own traffic, to introduce new and different sources of wealth, place our prosperity upon a broader and surer basis? Can we, by any process, put ourselves in a position which shall compel our enemies to inquire, not how they shall best avoid us, but how they can best get to us? which shall increase our own production, our own consumption, and invite new and lasting ties of commercial and social intercourse.

"If, with the increase of trade and traders, the industrial arts and artisans be also multiplied, would not the mutual dependence of the two classes go far towards placing business upon a stable foundation? Suppose we were to cheapen and facilitate transportation, bring the raw materials cheaply and conveniently to the hands of art, to be worked into infinite forms in our midst, give animation to business during the whole season, uninterrupted by winter, would not our market become more brisk and extensive, our means of supply increase; superior men be attracted and engaged in every de-

partment, and should we not be doing much to make St. Louis the manufactory and machine shop, as well as the emporium and metropolis of the Mississippi valley? Nature has endowed states as well as individuals, with various gifts. Else commerce would not have existed. If another state excels us in agricultural resources, we perhaps excel her in our mineral resources. One state may produce cotton and sugar—we produce hemp and tobacco. Wheat may be the staple of one—corn and pork may be that of another. One people may excel another in a particular handicraft. But no one state can either produce everything or manufacture everything. But inasmuch as great diversity enters into the consumption of every people, commerce, by which they exchange the surplus of one kind of their productions, for another kind which they need, which forms part of the surplus products of another people, becomes absolutely necessary. And just in proportion as we increase the diversity, the quality, the quantity, and the cheapness of our surplus productions, whether of the soil or of the factory, shall we invite, secure and extend our intercourse with other states and people.

"What of these results, if any, should we obtain by a rail-road to the West?

"What lies to the west of us, within the reach of any rail-road we might be able to construct? There are extensive beds of iron ore, of copper, of lead, and of bituminous and cannel coal, and doubtless undiscovered minerals of other kinds. There are fine forests of timber: there are fertile lands for tillage, and for grazing. There lies the route of the immense emigration to the great plains, to the land of Deseret, and to California. There goes the trail of the Santa Fe trader, and the fur and Indian trader. There go the Indian agencies and annuities, and government stores, munitions and troops. There, upon the borders of the Missouri river, lie the most populous counties of the state, embracing, at least, one-fourth of the whole people of the state. Here is St. Louis; there is Franklin and Gasconade, and Calloway, and Osage and Cole, and Cooper, and Howard, and Boone, and Lafayette, and Moniteau, and Saline, and Jackson, and Cass, and Ray, and Clay, and Platte and Buchanan, containing in the aggregate with Chariton and Carroll, not far from 250,000 people, and not less than 175,000 independently of St. Louis.

"There too, lies the Missouri river, turbid, dangerous, uncertain, full of snags and sandbars, and ever changing channels, causing high insurance, costly transportation and subject to many drawbacks and disappointments. Yet there the river runs, affording steamboat navigation for 2,000 miles to the west of us, and bearing a commerce which has trebled in three years, and now requir-

ing an average of one steamer per day for every day in the year. Doubtless, during the past extraordinary year, not less than 40,000 persons have been passengers upon that river. But what may be regarded as the regular number of travelers, I have no means of ascertaining. It may not possibly exceed 15,000. The number of tons brought out by the steamboats, omitting flats, rafts and keels, estimating 355 arrivals here at an average of 200 tons the boat, would be 71,000 tons. Supposing them to carry the same up the river, and the total number of tons is 142,000, and we may add to the catalogue, as lying yet to the west, the fertile territories of the Indians, the great plains, the new state of New-Mexico, the mountains, the new states of Deseret and of California, and the territory of Oregon.

"Now, then, in view of these people and objects, and territories, and things unnumbered and perhaps undiscovered, at the West, of what advantage would be a railroad in respect to them, and in respect to St. Louis ?

"The great modern historian of England has well said, that next to the alphabet and the printing press, those inventions which abridge distance have done most for the civilization of mankind. We may add, truly, that the rail-road is the great apostle of progress. Though it has come into existence within the memory of most of us, and there be those among us who have never seen one, yet experience has demonstrated that it possesses magical powers to revolutionize commerce, to increase wealth and intercourse, to stimulate industry, and to develop and make available the resources of a country to the fullest extent. It has been proven to possess unequaled advantage for locomotion, and advantages which remunerate the cost. It has superseded the canal, and it is constructed without fear and without loss, upon the banks of the most splendid water-courses in competition with the perfection of steamboat navigation.

"It carries out the city into the country ; it brings the country and its abundance into the city. It equalizes the value of the products of labor, it gives new life to business, cheapens and expedites transportation, gives it certainty and punctuality, distributes the comforts of civilization, and makes travel a delight. What then would it do for us ? Stimulating every species of industry in the vicinity of its route, it would, in the immense increase of production and travel, quadruple business. St. Louis, instead of being dull in the winter in consequence of closed navigation, would be lively through all the season. The merchants would no longer be subject to disappointment in sending forward their goods, the farmers and produce dealers in the interior would no

longer be compelled to lose a season before realizing the value of their crops. The grazier would no longer be subject to loss in driving his stock to market, and the consumers and the packers would get better meat. Real estate in St. Louis generally would be greatly enhanced in value, as it would, likewise, along the entire route, and within a day's journey of it, and in some places its value would be increased a thousand fold. New towns would spring up in the interior, and all the tillable lands along the route would be brought into cultivation. There would not be a farmer in any of the counties through which the road should be located, but would feel its benefits in the enhanced value of his property and productive industry of every kind. * * * * *

"Now let us, for a moment, imagine this road to be completed. Let us enter the depot, or station-house, which is the largest house in the city. Here we see boxes of merchandize of all sizes, and various articles of household and farming utensils, hogsheads of sugar, sacks of coffee and of salt, barrels of molasses and of whisky, kits of mackerel, boxes of raisins, bundles of paper, wagons in pieces, small carriages, kegs of nails, bars of iron, boxes of Indian goods, and of hats, and of shoes, glass, tar and turpentine, and a vast variety of articles marked for the towns in the interior, and some of them for Santa Fe, and some for Deseret, which the men are at work placing in the freight train. There is none of that disorder and flurry which exists upon the levee, but all is neatness and order, and conducted systematically, and under the strictest discipline and accountability. But the bell is ringing—we will take our tickets and step aboard the passenger train, with fifty or sixty other passengers, who are destined for various points along the line of the road. Off we go, at the speed of 25 miles the hour. We have not gone five miles when the pace is slackened, and we observe one or two gentlemen jumping off at their suburban residences. A few miles further is a platform and a turn out. Here several are waiting to get in, and several also get off to go to their dwellings. Here also we observe a string of open cars laden with coal. We pass on, scarcely having time to observe the fine residences which city gentlemen have constructed all along each side of the road ; but we stop every few minutes to let off a passenger or two and take on as many more, so that our number is kept about the same. Here we pass a train, standing in a turn-out, loaded with wood, with a few cars of baled hay attached. The country on either side seems to be full of busy men, and every farm occupied. Directly we reach a water station, where we observe immense piles of cord-wood, and many men still engaged, in hauling and cording. Here,

also, is a small refreshment house, and here again we leave and take a few passengers. Directly we come in sight of the Missouri, and catch a glimpse as we pass of a steamboat with a small freight and few passengers, puffing away, and hard on a sandbar. Soon we meet a freight train loaded with pigs of lead, and copper and iron, from Franklin county. In about two hours from St. Louis we are at the Union station, where we discharge a few passengers, and where we observe large piles of metal in pigs. Though stopping now and then to leave or take a passenger, or to supply the engine with water, we are soon in Gasconade county; we pass cars laden with cannon coal, and we discharge at the Hermann station a number of Germans and their baggage, and we observe some cars receiving freight, some of it apparently pianos, and quite a number of pipes one would suppose to be wine, all the manufacture of Hermann. We are soon, however, at the crossing of the Gasconade, which is a grand bridge of solid masonry, of great strength and durability. Here is quite an important station, and we notice a number of new buildings going up on lots sold by the company, immense quantities of yellow pine lumber piled up, and a number of cars, with an engine attached, ready to start for St. Louis with a heavy load of lumber. On we go, into Osage, stopping at the Linn station, and discharging and receiving passengers; but before we are aware of it, we are at the Osage River, and at another fine structure, by which we cross it. We observe a draw in the bridge, to admit of the passage of small steamboats. A small boat is lying just above the bridge, discharging freight, consisting of a variety of articles from the Osage valley, at a depot conveniently arranged, and a series of cars are receiving it. We observe also here a few new buildings, and a yard full of live stock, destined for St. Louis per rail-road. We hear of a scheme to penetrate, by a branch, the Osage valley. In scarcely three hours from St. Louis, we are taking a hasty dinner at the Jefferson City station, where we meet the down train, with about fifty passengers, and where we observe a number of cars also waiting their opportunity to pass down, loaded with bacon and beef, hides and peltries, dried fruits, beeswax, hemp, tobacco, eggs and poultry. We are scarcely an hour and a half from Jefferson City, before we are at the station called the Boonville station, a few miles south of that flourishing town. Here quite a number of passengers leave us. Our attention is drawn to a medley of noises arising from a freight train standing close at our side. We discover, through the bars, as our train moves on, that it is quite a long train of freight cars,

some of them filled with live hogs and cattle, and some loaded with hemp and tobacco, on their way to St. Louis. We cross the Lamine, stop at the Saline station, and we are struck with the fine appearance of the country as we pass on, and observe numerous excellent farms. We leave a few passengers at the Lexington station, a few miles south of that place, and reach our station, perhaps not far from the mouth of the Kansas, about tea time, having been ten hours from St. Louis. Here our remaining passengers, to the number of twenty or thirty, dispose of themselves for the night at a good hotel, intending in the morning to be off for Independence and Liberty, and Westport, and St. Joseph, and other places up the river. The hotel is quite full of passengers, there being as many to go down as up, and in the station house is a freight train getting ready to start. It was remarked that there were not less than 1,000 tons of freight on the road this day, and 100 passengers.

"Now, although this be an imaginary trip, who can doubt, who knows anything of railroads, that the picture would be fully, if not more than realized, upon the opening of such a road?"

ST. LOUIS—HISTORY OF, ETC.—The anniversary of the founding of this already great city was celebrated with much élan on the 15th of February. The festival was in every sense worthy of the occasion.

Wilson Primm, Esq., delivered the address, from which we would extract a few passages of wide-spread interest.

1.—*Founding of the City.*

"On the 15th February, 1764, Laclede and his party landed at the spot now occupied by our city, and proceeded to cut down trees and draw the lines of a town, which he named St. Louis, in honor of Louis XV., of France, a town which subsequently became the capital of Upper Louisiana, and which is now the commercial capital of Missouri. I could not, in justice to my audience, and on such an occasion, speak of the physical aspect of the country, more than to say, that St. Louis was then a wilderness, tenanted by the prowlers of the forest, and surrounded by untutored and savage bands of Indians, and that for long years afterwards the beasts of the forest afforded nourishment, and rude huts on the ground, and scaffolds in the trees, afforded shelter and protection to the generous and daring people who first exposed the bosom of our soil to the genial influences of social industry."

2.—*History and Progress.*

"From the time of its establishment, up to the year 1768, St. Louis had grown apace. The population had become settled; they had erected dwellings of a comfortable character, and had improved and culti-

vated the neighboring lands. Every thing, in short, connected with their position and prospects, warranted the anticipation of a peaceful and happy existence, under a mild and patriarchal form of provincial government.

"In the mean time, however, the fact of the cession of Louisiana, (not the terms of the cession,) had been made known at New Orleans. In 1766, whilst great dissatisfaction then prevailed, the Captain General, Don Antonio D'Ulloa, with Spanish troops, arrived there, and demanded possession in the name of Spain. This was refused, and the people of New-Orleans, indignant at a proceeding which had transferred them from hand to hand, like merchandise, drove back D'Ulloa from their shores.

"In this state of *quasi* revolt, the population of Lower Louisiana remained, clinging to their loved government of France, until the arrival of Count O'Reilly, in 1769. The inhabitants of Upper Louisiana, fewer in numbers, and incapable of such resistance as had been manifested by their southern brethren, were compelled to submit to Spanish authority. Accordingly, we find that on the 11th August, 1768, Mr. Rioux, a Spanish officer, with Spanish troops, perhaps the very same that had been driven from New-Orleans, arrived at St. Louis, and took possession of Upper Louisiana in the name of his Catholic Majesty.

"In February, 1779, Col. George Rogers Clark, under the authority of Virginia, after having struck many severe blows against the British power on this side of the Ohio River, was in the neighborhood of St. Louis, raising men from amongst the French inhabitants of Cahokia and Kaskaskia, for the purpose of re-capturing St. Vincent's, now called Vincennes, and which was then in possession of the English under General Hamilton.

"Understanding from the same source, that an attack was meditated upon St. Louis, by a large force under British influence, that too at a time when Spain was contending with England for the possession of the Floridas, Clark, with that chivalrous spirit, which has earned for him one of the brightest pages in American history, at once offered to the Lieutenant-Governor, Leyba, all the assistance in his power to repel the contemplated attack. The offer of assistance was rejected on the ground that no danger was really apprehended.

"In my former sketch of the history of St. Louis, I had placed the time of this offer by Clark in 1780. Satisfied that it was made anterior to that year, and whilst he was raising troops for the recapture of Vincennes, I am not, however, permitted to withdraw the statement that such an offer was made. The testimony of witnesses

then living, upon whose authority it was then made, leaves in my mind no room to doubt the correctness of the *fact*. In this too, I am borne out by the authority of Stoddard, in the historical sketches of Louisiana.

"The territory on which St. Louis stood, and that on which several other towns had been located, and the surrounding country, were claimed by the Illinois Indians, but they had acquiesced in the intrusion of the whites, and had never molested them. But when the rumor of an attack upon the town began to spread abroad, the people became alarmed for their safety."

3.—*Transfer of St. Louis to the United States.*

"Upon the transfer of the country from Spain to the United States, the introduction of American authority necessarily increased immigration of the Anglo-Americans, and the population slowly, but steadily augmented in numbers. On the 26th day of March, 1804, the country was constituted a District of the United States, under the name of the District of Louisiana, and on the 19th day of October of the same year, William Henry Harrison, then governor of the territory of Indiana and of the District of Louisiana, instituted the American authorities here. On the 4th of July, 1805, this country was erected into a territory of the United States, by the name of the territory of Louisiana, and on the 4th of June, 1812, it received the name of the territory of Missouri.

"We have now to arrive at a period when a new era was to dawn, not only on St. Louis, but upon all her northern and western dependencies, when a power, greater than that of the fabled lamp of Aladdin, was to be brought into requisition, and by its magic, to mature, as it were in a day, in the western wilds of America, an existence which, on the shores of the eastern continents, the lapse of centuries had not been able to produce.

"In 1817, the 'General Pike,' the first steamboat that ever ascended the Mississippi, made its appearance at St. Louis. Those who lived here at that time, can well remember the fear and consternation of the people who saw the craft, breasting the sturdy current of the river, without the help of sail or oar, and they can also bear in recollection the execrations and forebodings of the nervous and hardy voyagers, who felt and knew the days of the *warp and cordelle*, and of the *red feather in the cap*, were to pass away. The stoutest man of a keel-boat, usually placed in his hat or cap, on landing, a scarlet feather, which was the *gage* of battle to any one on shore who would dispute his title to superior manhood."

4.—*Admission into the Union.*

"Passing over the fierce discussions which eventuated in the establishment of Missouri as one of the confederacy, 1820, we come to the year 1822, when St. Louis, by legislative enactment, was erected into a city by the name which she now bears. Since that time, what wonderful changes have taken place? Working her way to importance and greatness through all the impediments which have been opposed by the neglect of the general government, and the tardy and grudging action of the state, of which she ought to be the pride, and is the chief support, St. Louis has still maintained her onward and upward flight, like unto the noble bird, which by its own power and strength, unsustained and unsupported, floats majestically over the storm-clouds of the sky.

"The advantages of education, the lights of science, the blessings of religion, placed within the reach of all; the establishment of a wise and vigorous municipal government, under the auspices of which her limits have been enlarged and her interior improved and embellished; the erection of manufactories, the extension of the arts, the regulation of commerce. All these results, so well known and appreciated by those who hear me, have flown from the natural resources of St. Louis, and the intelligence and enterprise of her citizens. She has now a name and reputation abroad of which we may all be proud. Let it be our care always to maintain them, so that hereafter, when away from our homes, the title of citizens of St. Louis may be more potent even than that which in ancient times afforded protection to the citizens of Rome."

5.—*Steam Navigation to St. Louis and on the Missouri.*

"Up to this time communication with New-Orleans was rare and difficult, and although Spain claimed the exclusive navigation of the Mississippi, yet she was not able to protect her subjects from the rapacity of the amphibious pirates who infested that river. The early efforts of the citizens of Virginia, from 1769, and the hardships and dangers which they encountered in attempting its navigation, bear me out in saying that a trip from St. Louis to New-Orleans, was more arduous than a trip would now be to China. Now we have steamboats which waft us with a velocity that seems almost to annihilate distance. Even the short interval of five days from New-Orleans to St. Louis, is not considered as anything extraordinary in the speed of the mighty crafts which stem the bold current of the Mississippi. Then the oar of the hardy voyager alone moved the dull bark against the rapid current, except, occasionally, when the southern breeze would spring up, and filling the sail,

permit him to rest from his toil. Besides these natural difficulties, communication with New-Orleans was at this time rendered dangerous, from the circumstance that a numerous band of robbers, under the guidance of two men, named Culbert and Maglibray, had located themselves at a place called Cottonwood Creek, 'La rivière aux Liards,' and begun a system of depredation which was highly alarming and detrimental to those who navigated the Mississippi. As communication between the two ports could be effected but once a year, the boats were generally richly laden, so that the plunder of them was wealth to the plunderers and ruin to the owners. The gay song of the voyager, as he kept time with the stroke of his oar, was the signal for the robbers to rush from their retreat. Armed at all points, they seized upon the vessels, and compelled the astonished and terrified crews to run them to shore. There they would divest them of all that was valuable and leave them at liberty either to continue their route, or return to their place of departure. This system of pillage was carried on with success; it was rare that a boat passed these robbers unseen, and seldom did they see one which they did not pillage."

6.—*First Steamboat on the Missouri River.*

"FRANKLIN, (Boonslick,) May 19, 1819.

"ARRIVAL OF THE STEAMBOAT.—With no ordinary sensation of pride and pleasure, we announce the arrival this morning, at this place, of the elegant steamboat Independence, Capt Nelson, in seven sailing days (but thirteen from the time of her departure) from St. Louis, with passengers and cargo of flour, whiskey, sugar, iron castings, &c., being the first steamboat that ever attempted ascending the Missouri. She was joyfully met by the inhabitants of Franklin, and saluted by the firing of cannon, which was returned by the Independence.

"The grand desideratum, the important fact is now ascertained, that steamboats can safely navigate the Missouri."

ST. LOUIS—STATISTICS OF.—The St. Louis *Republican* of the 1st inst. contains its annual review of the commerce of that city, and a variety of statistical tables, containing much valuable and interesting information, from which we condense the following particulars for 1850:

Population—free, 74,849; slave, 2,616; grand total, 77,465. Productive industry—capital invested, real and personal, \$3,853,351; persons employed, 7,929; annual product, \$13,908,577.

The population includes 23,774 natives of Germany, 11,257 of Ireland, 2,933 of England, and 2,450 of other countries, making an aggregate of 40,114 natives of foreign countries, leaving 37,051 for natives of the United States. This is even a greater dis-

parity between the native and the immigrant population than we supposed existed. We can add, from the representation of the St. Louis press and other reliable authorities, that the emigrant population of St. Louis constitutes one of the principal sources of its wealth and prosperity. They have added millions to the value of its real estate, immensely increased the aggregate of the annual returns of its productive industry, and created an important market for the productions of the soil, and the wares of the mechanic and the merchant.

We condense the following from its religious statistics:

Churches	Number	Seats	Value
Roman Catholic.....	12	10,862	534,300
Methodists.....	12	8,300	171,000
Presbyterian.....	8	5,700	200,000
Lutheran.....	5	3,300	44,500
Episcopal.....	5	2,750	136,000
Other Protestant.....	7	4,800	127,700

Grand total, 49 churches, containing 35,712 seats, and valued at \$1,213,500. The last division includes 2 Unitarian churches, with 2,100 seats, valued at \$70,000; 2 Evangelical, with 600 seats, valued at \$4,700; 2 Baptist, with 1,600 seats, valued at \$38,000; and 1 Boatmen's, with 500 seats, valued at \$15,000. In addition to these, there are 2 Synagogues, with 470 seats, one of which is rented, and the other valued at \$7,000. The Roman Catholic population is much more numerous than is indicated by the number of seats in the Roman Catholic churches, as a very large portion of that denomination worship in the aisles and vestibules, and an average of three several congregations assemble at each church at the different hours of the several masses on Sunday morning.

The educational statistics of the city comprise 15 public schools, with 2,378 pupils; 44 common schools, with 2,847 pupils; 9 Roman Catholic schools, (including two convents.) with 1,356 pupils; 1 Roman Catholic College, 250 pupils; and 2 Medical Colleges, with 14 professors and 202 students. There are also a number of schools and seminaries in the county, beyond the city limits, not included in the above.

The statistics in the *Republican* contain various other items of general interest indicating an extraordinary degree of prosperity, and illustrating the steady progress of St. Louis in wealth, population, productive industry, education and religion.

ST. LOUIS—FOREIGN IMPORTS AT.

Statement of Foreign Merchandise imported, and duties paid, at St. Louis, during the year ending 31st of December, 1851, made from the Report of W. W. Greene, Surveyor of the Port of St. Louis.

FOREIGN merchandise imported into St. Louis in the year 1851, and entered here, the foreign value of which amounts to.....\$757,509 00
Foreign merchandise entered at other ports in 1851, and now in transporta-

tion, under bond for the payment of duties at St. Louis, the entries being received, the foreign value of which is,\$107,902 00
Amount of duties on foreign merchandise collected in 1851.....239,318 68
Amount of duties unpaid for merchandise in store 31st December, 1851.....8,261 89
Amount of duties unpaid on merchandise to transmit from other ports, destined to this port.....32,679 20

Amount of duties paid and accruing on merchandise imported for this port in 1851.....280,259 77

Of the above, exclusive of the said merchandise in transit, there was imported from England &c. the foreign value of which was.....406,113 00

From France.....38,404 00
Germany and Holland.....23,239 00
Spain and dependencies.....220,770 00
Brazil.....68,983 00

Total foreign value.....\$757,509 00

The general description of merchandise imported, entered for consumption, and warehoused in the year, and foreign value thereof, is as follows, viz.:

Sugar and molasses.....\$289,753 00
Hardware, &c.....133,401 00
Railroad iron.....100,211 00
Earthenware.....98,756 00
Tin plates, tin, iron, copper, &c.....81,482 00
Brandy, wines, gin, cordials, &c.....24,712 00
Dry goods and fancy goods.....24,287 00
Burr stones.....2,259 00
Drugs and medicines.....2,618 00

Total.....\$757,509 00

Hospital money collected at this port in 1851.....\$2,941 00

Hospital money expended at this port in 1851, for relief of sick and disabled boatmen.....\$3,441 44

STEAMBOAT ARRIVALS.

	1847.	1849.	1851.
New-Orleans.....	502	313	300
Ohio River.....	430	406	457
Illinois River.....	656	686	634
Upper Mississippi River.....	717	806	639
Missouri River.....	314	355	301
Cairo.....	146	122	119
Other points.....	204	217	175

STEAMBOAT, ETC., STATISTICS.

	1850.	1851.
Arrivals, steamboats and barges.....	2,339	3,003
“ Keel and flatboats.....	115	43
Tonnage of steamboats and barges.....	681,256	623,140
Wharfage.....	\$41,195	48,156
Paid City Treasury.....	38,382	45,266
Harbor master's fees.....	2,735	2,892

STEAMSHIPS—PROSPECTUS FOR ESTABLISHING A LINE OF PROPELLER STEAMERS BETWEEN LIVERPOOL AND NEW-ORLEANS.—By WM. MURE.—It is proposed to establish a line of steamers to ply between the ports of New-Orleans and Liverpool, commencing with two vessels to be worked by screw propellers. The required capital, amounting to \$400,000 or \$450,000, to be raised by subscription, in shares of \$1,000 each, payable in equal instalments of 3, 6, 9, and 12 months. The vessels to be of the register burthen of about 1500 to 1600 tons, and to

have extended accommodations for first and second-class passengers, as well as capacity for large cargoes.

The principle of propulsion by screws is adopted for its economy and convenience. A vessel built on this plan, by the best workmen on the Clyde, similar to the "City of Glasgow," which has answered the expectations of its projectors, will only cost about one-third of the sum invested in the large steamers of the Cunard and Collins lines. The working expenses, coal, &c., are also on a greatly reduced scale, while the capacity for goods and passengers is larger, owing to the great saving in the space occupied by the engines and coals.

The time is opportune, as the British West India steamers have been forced (from lack of time to visit so many points) to give up calling at Mobile Point or Havana, and a considerable number of passengers and goods could be had by touching at the latter point. It is also believed that the English Government will give the Havana mails to the first company putting on a direct line of steamers. Indeed, on the faith of this, it was lately proposed in England to place a steamer on the Havana and Liverpool station; but the trade between the two ports being thought insufficient, *of itself*, the project has been for the present abandoned.

Annexed will be found a schedule of the estimated income and expenditure, which, it will be noticed, shows a net annual profit of \$92,616 for one steamer costing \$220,000, or 42 per cent.; a very ample deduction for interest and depreciation, say 25 per cent., having been made from the gross earnings.

It is certain, from the character of the cotton trade between this port and Liverpool, that a vessel which could be relied on to arrive within a certain time, would always command a preference from shippers, at a higher rate than current for sailing vessels. At the present time, a difference of 1-8d to 1-4d would readily be paid, so that 1-2 per lb. might be fairly calculated upon as a very moderate freight.

Estimate of Receipts, Expenses, and Profits, also depreciation, of a Steamer upon the propeller principle, of about 1500 to 1600 tons, capable of carrying 3200 bales of Cotton, and on her return voyage 850 tons of Measurement Goods and 500 tons of dead weight, to run between New-Orleans and Liverpool, touching at Havana—

RECEIPTS OR INCOME.

3,200 bales of cotton at 1-2d per lb.	£3,200
100 cabin passengers, at £30 each	3,000
100 second cabin passengers, at £15 each	1,500
Small parcels, mails from Havana, not calculated	
	£7,700
Income of four outward trips from New-Orleans	£30,800

From Inward Trips.

850 tons measurement goods, at £3 per ton, (low rate),	£2,550
500 tons dead weight, at £1	500
100 cabin passengers, at £30	3,000
100 second cabin passengers, at £15	1,500
	£7,550
Income of four inward trips	£30,200
Income of one boat	£61,000
But deduct one-third from that derived from passengers for reduced numbers	12,000
Income of one steamer, independent of mails, small packages, and expenses. } The "City of Glasgow" charges £4 per ton to New-York, and the importers here would prefer a direct line, instead of paying a high freight and then reshipping from New-York.	£49,000

EXPENSES IN DOLLARS.

Wages for Captain, per month	\$200
" Mate, \$50; 2d, \$40; 3d, \$30	120
" 1st Engineer, \$100; 2d, \$60	160
" 3d Engineer, \$50; Assistant, \$40	90
" 6 Firemen, \$150; 2 Lampmen, \$40	190
" 2 Boys, \$16; 2 Apprentices, \$16	32
" 12 Seamen, \$15 per month	180
" 4 Apprentices	28
" 1 Carpenter and Mate	30
" 8 Waiters, \$120; 1 Chambermaid, \$12	132
" 1 Steward, \$40; 2d Steward, \$30	70
" Stewardess, \$25; 3 Cooks, \$15	100
Victualing per month 53 hands	530
	\$1,862
Add for extra help and other expenses	250
	\$2,112
Or for 12 months, and no deduction is made for the time the vessel is in port for seamen's wages	\$25,344
Coal, 300 to 400 tons, say 350 tons for 8 voyages—2,800 tons—or rather calculate 3,000 tons, at \$5	15,000
(The coal can be bought in Liverpool at 12s. stg., and \$6 to \$7 here.)	
Victualing 100 cabin passengers per trip, at \$20—8 voyages	16,000
100 second cabin, \$10	8,000
Wharfage and pilotage per trip, and dock dues in Liverpool, 17c. per ton per day, 14 days in port	\$250
8 voyages	2,000
Discharging cargo in Liverpool	\$500
4 voyages	2,000
Extra labor in discharging cargo at New-Orleans	250
Compressing and stevedores' wages on 3,200 bales—80c. per bale	2,560
4 inward loadings	10,240
Commission 2½ per cent. on collecting freight and passage money	6,000
Commission 2½ disbursements in New-Orleans and Liverpool	2,000
	\$87,584
Allow for interest on \$220,000, insurance, and depreciation, in value, in one year, say 25 per cent., which is a very large allowance	55,000
	\$142,584

STEAM-BOILER EXPLOSIONS. —

Since the melancholy and terrible explosion of the *Louisiana*, at the New-Orleans levee, by which from one hundred and fifty to two hundred persons were ushered into

eternity, public attention has been again called to this desolating evil. Is there blame, and to whom does it attach? Can no remedy be devised?

The late Commissioner of Patents made a report from very defective returns, as he admits, of these explosions, which presents the following particulars. It extends back for many years.

Whole number of—	
Boats on which explosions have occurred	233
Passengers killed (enumerated in 6 cases)	140
Officers	31
Crew	25
Whole number killed in	164
“ wounded in	111
Total amount of damages in	75
Average number of—	
Passengers killed in the enumerated cases	*23
Officers	2
Crew	2
Killed	11
Wounded	9
Average amount of damages	\$13,302
The cause is stated in 98 cases; not stated in 125; unknown 10; together	233
1. Excessive pressure gradually increased was the cause of	16
2. The presence of unduly heated metals	16
3. Defective construction	33
4. Carelessness or ignorance	32
5. Accidental (rolling of the boat)	1

NATURE OF THE ACCIDENTS.

Bursting boiler	101
Collapsing flue	71
Bursting steam pipe	9
“ steam chests	1

DATE OF EXPLOSIONS.

1816	3	1825	2	1831	2	1837	13	1843	9
1817	4	1826	3	1832	1	1838	11	1844	4
1819	1	1827	2	1833	5	1839	3	1845	11
1820	1	1828	1	1834	7	1840	8	1846	7
1821	1	1829	4	1835	10	1841	7	1847	12
1822	1	1830	12	1836	13	1842	7	1848	12

Date given in 177 cases, not stated in 56.—Total 233.

GENERAL ESTIMATE.

Of the total loss of life and property, calculated from the average of the given cases.

Pecuniary loss, 233 cases, at \$13,302 each	\$3,090,366
Loss of life	11 each
Wounded	9 “
Total killed and wounded	4,660

The St. Louis Republican, in a late number, gave some very interesting statistics as to the number of boats lost since the commencement of steam navigation on the western waters. The following compilation will be interesting to our readers:

From the year 1810 to the year 1820	3
“ 1820 “ 1830	37
“ 1830 “ 1840	184
“ 1840 “ 1850	272
Boats whose dates of loss are unknown	80
Total number of boats	576

* The average is not a fair one, as it is derived from but six cases, in one of which (the Pulaski) the very unusual number of 120 lives were lost.

Bolt and boiler forced out	1
Struck by lightning	1
Blew out boiler head	4
Breaking cylinder head	1
“ flange of steam pipe	2
Bridge wall exploded	1
Unknown	3
Not stated	38
Total	233

CLASSIFICATION OF CAUSES.

1. Under pressure within a boiler, the pressure being gradually increased. In this class are the cases marked “excessive pressure.”

2. Presence of unduly heated metal within a boiler. In this class are included—

Deficiency of water	14
Deposits	2—16

3. Defective construction of the boiler and its appendages.

Improper or defective material	In this class are included—	
	Cast-iron boiler head	5
	Inferior iron	5
	Iron too thin	3
	Cast-iron boiler	1
Bad workmanship	Defective iron in flue	1—15
	Want of proper gauge cocks	3
	Defective flue	1
	Extending wire walls	1
	Pipe badly constructed	1
Defective boiler (nature of defect not stated)	Want of slip joint on pipe	1—7
	Total in this class	33

4. Carelessness or ignorance of those intrusted with the management of the boiler.

In this class—	
Racing	1
Incompetent engineer	2
Old boilers	6
Stopping off water	1
Carelessness	23—
Total	32

Tonnage of 480 of the above boats as ascertained by record 68,048
Tonnage, supposed, of the remaining 96 boats 17,210

Total tonnage	85,258
Original cost of boats lost by sinking as ascertained	\$6,348,940
Supposed original cost of 102 not accounted for	765,000

Total original cost	\$7,113,940
Total depreciation of the above boats while in service	\$3,665,890

Final loss, total \$3,681,297

These statistics refer to those steamboats only that have been sunk by snags and other obstructions.

The list of boats destroyed by fire, consists of 166. The original cost of these 166 steamers was \$1,010,854; their depreciation while in service, \$1,041,434, and their final loss \$1,817,428.

The explosions that have occurred on the western waters up to the present year number 209. The loss of life actually recorded is 1,440. The number of wounded 838.

The pecuniary loss in the 209 instances, at the supposed reasonable average of \$13,302 for every boat, is \$2,780,118. Regarding the subject of the loss of life just mentioned, we will add that in numerous cases where it is known that many human beings were launched into another world, the records show nothing. The following estimate is reasonable—it may fall short of the reality:

Estimate of persons killed, in 209 explosions, averaging eleven persons to each case	2,299
Estimate of persons wounded, averaging nine to every explosion	1,881
Supposed total killed and wounded	4,180

The record of the boats destroyed by collisions is somewhat incomplete, we think. It comprises a list of 45 boats, whose original cost was \$538,906; depreciation while in service \$153,673, and the final loss \$379,933.

STEAMBOAT DISASTERS.—BOATS SUNK, BURNED, OR OTHERWISE INJURED, ON WESTERN WATERS, 1849.*—Below we give a list of steamboat accidents which occurred during the past year, as taken from the files of newspapers. This may not include all, but a majority of the cases will be found correctly and duly chronicled. The estimated loss of each is also taken from the same source, and it may be slightly defective as to real value, but in the aggregate the figures will not be found to differ widely from a true statement:

BOATS TOTALLY DESTROYED.

Estimated value

Anne Elizabeth, Jan. 27, sunk on Falls of Ohio	\$35,000
Andrew Fulton, Feb. 22d, sunk at Platin Rock	28,000
Alph. de Lamartine, April, burnt at Bath, Ill. river	40,000
Alice, May 17th, burnt, St. Louis	18,000
American Eagle, May 17th, burnt, St. Louis	11,000
Acadia, May 17th, burnt, St. Louis	10,000
Alex. Hamilton, May 17th, burnt, St. Louis	15,000
Albert, spring, sunk by collision, Ohio river	10,000
Aaron Hart, Oct. 10th, burnt, New-Orleans	30,000
Algoma, July 29th, burnt, St. Louis	18,000
Amelia, Dec. 8th, sunk Missouri river	12,000
Boreas, No. 3, May 17th, burnt, St. Louis	15,000
Belle Isle, May 17th, burnt, St. Louis	10,000
Boliver, May 14th, sunk, Cumberland river	6,000
Car of Commerce, Jan., sunk, on Falls of Ohio	25,000
Convoy, Feb. 25th, burnt, near Vicksburg	60,000
Champion, summer, blown up, New-Orleans	5,000
Caroline, summer, sunk by collision, Wellsville	10,000
Courier, spring, sunk, Lower Mississippi	12,000
Cumberland Valley, summer, sunk, Missouri river	10,000
De Kaib, Feb. 12th, sunk, Santee river	8,000
Dahcota, spring, sunk, Missouri river	30,000
Diligence, summer, sunk, Fort Coffee	4,000
Del Norte, summer, sunk, Rio Grande river	8,000
Declaration, fall, sunk, Pass Saluda	10,000
Dubuque, July 29th, burnt, St. Louis	8,000
Empire, Jan. 15th, sunk on Falls of Ohio	40,000
Ellen, spring, sunk by collision, Ohio river	5,000

Edward Bates, May 17th, burnt, St. Louis	\$20,000
Eudora, May 17th, burnt, St. Louis	21,000
Eliza Stewart, May 17th, burnt, St. Louis	13,000
Emily, May 31st, blew up, Apalachicola	10,000
Falcon, (new.), Oct. 12th, burnt, N.-Orleans	45,000
Fulton, spring, sunk, Red Bayou	15,000
Frolic, May 17th, burnt, St. Louis	3,000
General Brooke, May 17th, burnt, St. Louis	3,000
Germantown, Aug. 25th, burnt, Raleigh	18,000
General Jesup, December, sunk, Hat Island	30,000
General Pike, summer, burnt, Lower Mississippi	30,000
Harkaway, Jan. 1st, sunk, Donaldsonville	25,000
Highlander, May 1st, burnt, St. Louis	14,000
Ivanhoe, Nov. 9th, burnt, Cincinnati	14,000
Illinois, Nov. 12th, burnt, New-Orleans	35,000
Kit Carson, May 17th, burnt, St. Louis	14,000
Louisiana, Nov. 15th, blew up, New-Orleans	40,000
Milwaukee, Jan. 1st, sunk by ice, Naples, Illinois river	12,000
Mary Ann, Jan. 17, sunk, collision, Pittsburg	8,000
Mustang, summer, burnt, Duncan's Point	12,000
Matilda Jane, fall, sunk, near New-Orleans	15,000
Montauk, May 17th, burnt, St. Louis	36,000
Mamaluke, May 17th, burnt, St. Louis	30,000
Mandan, May 17th, burnt, St. Louis	12,000
Marshal Ney, Oct. 10th, burnt, New-Orleans	35,000
Mary, July 29th, burnt, St. Louis	30,000
Martha, May 17th, burnt, St. Louis	44,000
Northern Light, Jan. 18th, burnt, Pittsburgh	10,000
Oella, No. 2, Dec. 13th, sunk, Anderson's Ferry	6,000
Prairie State, May 17th, burnt, St. Louis	26,000
Phenix, July 29th, burnt, St. Louis	16,000
Roscoe, summer, sunk, Ohio river	20,000
Richland, January 17th, burnt, Peedee river	12,000
Red Wing, May 17th, burnt, St. Louis	21,000
Revolution, May 16th, burnt, Peru, Illinois river	12,000
Sarah, May 17th, burnt, St. Louis	70,000
St. Peters, May 15th, burnt, St. Louis	12,000
Samuel Walker, summer, burnt, Memphis	20,000
North America, Nov. 10th, burnt, N.-Orleans	10,000
San Francisco, July 29th, burnt, St. Louis	28,000
Sallie Anderson, Sept. 24th, burnt, Arkansas river	10,000
Saranak, fall, sunk, near Baton Rouge	25,000
S. W. Williams, April 9th, lost in a gale, mouth of Brazos	16,400
Texas, fall, burnt, Red River	35,000
Transport, fall, sunk, Lower Mississippi	18,000
Taglion, May 17th, burnt, St. Louis	20,000
Timour, May 27th, burnt, St. Louis	28,000
Tennessee, Dec. 2d, sunk, near Cincinnati	15,000
Thos. Jefferson, December, sunk, near Baton Rouge	30,000
Viola, Dec. 27th, sunk by collision, near Donaldsonville	9,000
Virginia, fall, blew up, Ohio river	17,000
White Cloud, May 17th, burnt, St. Louis	3,000
Wm. Armstrong, November, sunk, near Little Rock	10,000
Western, summer, sunk, Wabash river	6,000
Wave, summer, sunk, False river	5,000

Total number, 63. Total estimated loss. \$1,585,400

The above estimate of losses includes cargoes on board at the time of sinking.

Accidents to Steamboats, which were afterwards raised and repaired.

Anthony W. Vanleer, collapsed a flue at Plaquemine, by careening, Feb. 21st. One negro fireman killed and four others badly scalded.

Amaranth, came in collision with the Dr. Franklin, No. 2, in the Upper Mississippi. The A. was struck on her starboard bow, and sunk, afterwards raised and repaired.

Allen Glover, run into by the Forest Mon-

* Every year tells a similar and even more sad-denning tale.

arch, near Mobile, Jan. 10. Seriously damaged, but saved from sinking.

Avalanche, badly injured by coming in contact with the Alvarado in the Illinois river, near Bardstown. Saved from sinking by means of pumps and bulk-headings.

Anthony Wayne, sunk while ascending the Lower Rapids in the Mississippi, in Dec., afterwards raised and taken to Rock Island for repairs.

Avalanche, sunk on the Chain in December, 12 miles above this city, where she now lies high and dry.

Buena Vista, took fire at Kaskaskia landing, cargo greatly damaged by water, boat saved from burning by the exertions of her officers and crew.

Belle Creole, exploded one or more boilers on her trip from Mobile to New-Orleans, Several persons badly scalded.

Confidence, sunk at New-Albany bar in the Ohio, Sept. 23th, raised and sunk again a few miles below Cincinnati, on the 10th of Nov. Again raised and taken to Louisville for repairs.

Daniel Boone, sunk in the Wabash river, afterwards raised and repaired.

Embassy, exploded boilers at Evansville, Ind., in June, killing and badly scalding more than thirty persons; since repaired and now running.

Falcon, sunk by ice at the mouth of the Missouri; since raised.

Fawn, badly injured by coming in collision with the steamer Patrick Henry in the Yazoo River. Engineer killed and several others badly injured.

Gov. Bent, exploded boilers at Island 75, Lower Mississippi, April 26th; one deck hand killed.

Gov. Briggs, struck a wreck and sunk, in backing out from the wharf at St. Louis, July 12th; since raised and repaired.

Highland Mary No. 2, struck a snag in the Upper Mississippi, near Bayley's landing, and sunk in eighteen feet water; since raised and repaired; cargo valuable, and greatly damaged.

J. T. Doswell, sunk by coming in contact with the Gen. Jesup in the Lower Mississippi near Tunica, September 29; since raised and repaired.

Lake of the Woods, collapsed a flue on Grand River, killing the first engineer and five other persons; repaired.

Laura, exploded her boilers in Ouachita River, Nov. 8th, several persons badly scalded.

Mustang, sunk in Arkansas River, near Fort Smith, in January; since raised and repaired.

Mohawk, struck a snag in the Lower Mississippi near the mouth of the Arkansas, which knocked a hole in her hull, causing a large amount of freight and a considerable number of cattle to be thrown overboard;

went on the docks at New-Orleans, afterward run out on a bar near Vicksburgh, since got off and taken to Louisville for repairs.

Magnet, collapsed connection pipe and flue at St. Louis, August 8th; since repaired.

Pike No. 9, met with an accident near Louisville, in February, by which the boat was considerably injured and three persons killed.

San Francisco, exploded a boiler at St. Louis, May 30th, killing and scalding several persons; afterward burned at the same place on July 29th.

St. Paul, sunk at Hat Island, Nov. 18th; raised and taken to Vide Poche for repairs, and now running, valuable cargo; badly damaged and partially lost.

Santa Fe, collapsed a flue at Fort Coffee, January 14th; one person killed.

Talleyrand, lost a cargo of 1,110 bales of cotton by parting hog chains near Egg Point, in the lower Mississippi.

Warrior, collapsed a flue near College Point, on the lower Mississippi, killing one engineer and four or five others.

It will be seen that the total loss of boats and cargoes, is estimated at \$1,585,400 not including the numerous other accidents, such as sinking, collapsing of boilers, flues, damages to boats' cargoes, &c., and we think a fair estimate of every loss connected with western steamboat navigation, if included, would swell the amount to the enormous sum of \$2,000,000 or more; and included in this, accidents of flat, keel and various other species of water craft, and we might safely set the sum total down at \$2,500,000.

STEAMBOAT DISASTERS ON THE WESTERN WATERS,

During the year 1850, as published in the Insurance Reporter :

Total number of boats.....	119
“ “ lives lost.....	320

On the Western Waters during the year 1851.

From sinking, striking snags, and other obstructions of the river.....	52
From collapsing of flues.....	8
“ explosion.....	16
“ collisions.....	8
“ fire.....	13
“ various causes.....	12

Total number of boats.....	109
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Lives lost, as near as ascertained, during the same period.

From collisions of boats.....	86
“ explosion and sinking.....	407
“ fire.....	161

Total number of lives lost.....	454
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Comparative loss of lives during the years 1850 and 1851.

	1850	1851	Excess
Collision of boats.....	8	86	78
Explosions and collapsing of flues.....	161	407	247
Fire and sinking.....	156	161	5
Excess of lives lost in 1851.....			230

STATISTICS—SCIENCE OF.—The science of statistics is of recent origin. Archenball, who was born at Elbing, in Prussia, in 1719, and died in 1772, was the first who gave the name and a scientific form to this branch of knowledge. His compend, originally published in 1749, went through seven editions. His most distinguished pupil, Schlossa, carried out his views still further, in the excellent yet incomplete "Theory of Statistics," printed at Gottingen in 1804. In 1807 appeared Newman's "Outlines of Statistics." In the systematic and compendious treatment of this subject, Toze, Remer, Meusel, Sprengel, Mannert, Fischer, and especially Hassell, have distinguished themselves. The last named is the eminent geographer. In Italy there are the well-known names of Balbi, Quadri and Gioja. The first European government that paid any attention to the collection of statistics in a systematic manner, though this was on a limited scale, was Sweden.

About the middle of the last century a special commission was employed, who made known at intervals of five years many interesting facts in relation to the population of the country, etc. Schlosser having called attention to the important results of the Swedish commission, several other states soon entered into a similar arrangement. There is now a Statistical Department, or what is termed a "Bureau," in connection with the government of Prussia, Austria, Bavaria, Wurtemberg, Naples and Sardinia. At the head of the "Bureau" in Berlin is a gentleman of great intelligence, M. J. G. Hoffman. In 1832, Lord Auckland and Mr. Poulett Thompson, who then presided over the Board of Trade, in England, established a statistical office in that department, to collect, arrange and publish statements relating to the condition and bearing upon the various interests of the British empire. The volumes annually printed and laid before Parliament by this office, are well known and highly esteemed. In the year 1831, a statistical society was formed in the kingdom of Saxony, which has prosecuted its objects with great energy and success. The French Society of Universal Statistics was founded on the 22nd November, 1829, and is under the protection of the king. It proposes and decrees prizes, grants medals, publishes a monthly collection of its transactions, and maintains a correspondence with learned bodies in all countries. The society numbers at present more than fifteen hundred members, French and foreign, who are classed into titular, honorary and corresponding members. The subjects about which the society is employed are arranged into three classes: First, Physical and descriptive statistics, embracing topography, hydrography, meteorology, geology, mineralogy, population, man considered physically, hygiene, and

the sanitary state. Second, Positive and applied statistics, embracing vegetable and animal productions, agriculture, industry, commerce, navigation, state of the sciences, general instruction, literature, languages, and the fine arts. Third, Moral and philosophical statistics, including the forms of religious worship, legislative and judicial power, public administration, finance, the military, marine and diplomacy.*

The science of statistics may be considered as almost a new one in our country; it has, nevertheless, of late excited much attention, and we see from the reports of Congress and of state, down to the newspaper press, the strongest evidence of its favor and progress. Such a science is worthy of all attention, and deserves to be introduced into our schools and colleges as it is into the merchant's counting house and the legislative halls, as an independent and most important branch of sound practical education.

STATISTICAL BUREAUS IN THE STATES.—CIRCULAR OF THE BUREAU OF STATISTICS TO THE PEOPLE OF LOUISIANA.

I. Time of *settlement* of your parish or town: dates of oldest land grants; number and condition of first settlers; whence emigrating; other facts relating to settlement and history.

II. *Indian names* in your vicinity; what tribes originally; what relics or monuments of them; if Indians still, in what condition?

III. *Biography*, anecdotes, &c., of individuals distinguished in your vicinity in the past for ingenuity, enterprise, literature, talents, civil or military, &c.

IV. *Topographical description* of your parish, mountains, rivers, ponds, animals, quadrupeds, birds, fishes, reptiles, insects, &c.; vegetable growths, rocks, minerals, sand clays, chalk, flint, marble, pit coal, pigments, medicinal and poisonous substances, elevation above the sea, nature of surface, forests, or undergrowths, what wells and quality of well water, nature of coasts, does the water make inroads, mineral springs, caves, &c.

V. *Agricultural description* of parish; former and present state of cultivation; changes taking place; introduction of cotton, sugar, rice, indigo, tobacco, grains, fruits, vines, &c., &c.; present products; lands occupied and unoccupied, and character of soils; value of lands; state of improvements; value of agricultural products; horses, cattle, mules, hogs, and whence supplied; profits of agriculture, prices of products; new estates opening; improvements suggested in cultivation and new growths; improvements in communication, roads, bridges, canals, &c.; kind and quantity of timber, fuel, &c.; state of the roads, summer and winter; kind of inclosures, and of what timber; manures; natural and artificial pastures; agricultural implements used;

* Hazard.

fruit trees, vines and orchards; modes of transportation; extent of internal navigation; levees, &c.; modes of cultivating and manufacturing sugar in use.

VI. *Instances of longevity and fecundity*; observations on diseases in your section; localities, healthful or otherwise; statistics of diseases; deaths; summer seats, &c.

VII. *Population of your parish*; increase and progress, distinguishing white and black; Spanish, French, American, or German origin; foreigners, classes of population; number in towns; growth of towns and villages, &c.; condition, employment, ages; comparative value of free and slave labor; comparative tables of increase; marriages, births, &c.; meteorological tables of temperature, weather, rains, &c.

VIII. *Education and Religion*.—Advantages of schools, colleges, libraries enjoyed; proportion educated at home and abroad; expense of education; school returns, churches or chapels in parish, when and by whom erected; how supplied with clergy; how supported and attended; oldest interments, church vaults, &c.

IX. *Products in Manufactures and the Arts*.—Kinds of manufactures in parish; persons employed; kind of power; capital, wages, per centum profit; raw material; sugar and cotton; machinery and improvements; kind and value; manufacturing sites, &c.

X. *Commercial Statistics*.—Value of the imports and exports of Louisiana, with each of the other states of the Union, as far as any approximations may be made, or data given; growth and condition of towns; increase in towns, &c.

XI. *General Statistics*.—Embracing banking, railroads, insurances, navigation, intercommunication; learned and scientific societies; crime, pauperism, charities, public and benevolent institutions; militia, newspapers, &c.; application of parish taxes; expenses of roads, levees, &c.; number of suits decided in different courts; expenses and perfection of justice; number of parish officers, lawyers, physicians, &c.

XII. Date, extent, consequences, and other circumstances of droughts, freshets, whirlwinds, storms, lightnings, hurricanes, or other remarkable physical events in your section, from remote periods; other meteorological phenomena; changes in climate, &c. &c.

XIII. *Literary productions emanating from your neighborhood*; your associations, if any; what manuscripts, public or private records, letters, journals, &c., or rare old books, interesting in their relation to the history of Louisiana, are possessed by individuals within your knowledge. State any other matters of interest.

In his report of January, 1848, Hon. Edmund Burke, Commissioner of Patents, re-

marks: "I have been informed that a bill has been introduced and is now pending in the legislature of Louisiana, providing for the organization and establishment of a Bureau of Statistics. It is ardently hoped that the measure may be carried, and that the example which will be thus set by Louisiana, resulting from an enlightened view of the importance of her great interests, agricultural and commercial, will be speedily followed by other states of the Union—all have industrial interests of sufficient importance to justify the establishment of such a bureau in their respective governments." In the volume for 1849, language still stronger is used by the commissioner: "In the pursuit of its statistical investigations, this office has keenly felt the want of means for obtaining accurate and reliable information concerning the great industrial interests of the country. No provision has been made by the general government for obtaining such information, except in relation to our foreign commerce, and but very few of the states have adopted measures for obtaining authentic information in relation to these industrial interests. Massachusetts and Louisiana are in advance of most other states in their legislation upon these subjects. In the former state, very full returns are obtained in short periods of a few years, if not annually, of her industry and resources; and in the latter a Bureau of Statistics has been established, etc., etc. A most interesting view of the vast resources of this great republic would be annually exhibited, if all the states would follow the example of Louisiana and Massachusetts. The statesman and legislator, to whom the people commit the destinies of their common country, would then have at their hands ample material to aid them in the intelligent discharge of their momentous and responsible duties, without which they are like blind men feeling their way in the dark."

A special committee of the legislature of South Carolina, in the session of 1848, after having ably shown, in a variety of instances, how little information existed in regard to the resources of that state, declare, "There are facts and considerations which, properly exhibited, would prove the necessity of providing some such organization as would lead to a correct understanding of these important matters; and the insufficiency of the matters here presented, only serves to show conclusively that we have been heretofore neglectful of those means of information which are calculated to elicit correct apprehensions of our advantages and duties. We know not how strong we are at some points, and how weak we are at others. The appointment of such a committee (*i. e.*, on commerce, agriculture and mechanics) will soon lead to the establishment of an efficient Bureau of Statistics, which will be the means of collecting and disseminating statistical information

touching all the interests of the state, of the most valuable kind."

Governor Seabrook, in his message to the legislature of the same state, says: "To ascertain with correctness the resources of a country which a beneficent Being has so prodigally endowed, is among the paramount duties of the representatives of the people. Their development and improvement, when ascertained, might properly be entrusted to the people themselves.

"As inseparable from the enterprise, should the wisdom of the legislature determine to prosecute it, I recommend the careful collection of statistical information on all the branches of industry. By the possession of facts and materials, lucidly arranged and methodized, we shall be furnished with complete data, as to the present state of the population, white and colored; concerning agriculture, commerce, navigation, manufactures, trade, finance, health, and indeed of whatever may be interesting or instructive to our citizens and their rulers. Under our political organization, and in the condition of society which the southern states exhibit, the value of this knowledge will soon become manifest and duly estimated. It will tend materially to facilitate many of the most important duties of the public functionary; enable the legislature to adjust and regulate the various interests of society, and to reduce a chaos of details, on matters requiring their action, into order and system. Nor will the people themselves be less benefited. To know all that concerns the land of their birth, is a matter of pride and deep interest.

The suggestions of the governor are, we understand, soon to be carried out, and a number of distinguished citizens of the state have had the subject in consideration, and are, by correspondence, &c., devising the best method to ensure success. The state has already, by a handsome appropriation, secured the publication of the reports of her central agricultural society in one large volume, embracing a vast amount of information relating to the staples of cotton, rice, and corn, the negro population, negro laws, soils, minerals, manures, etc., etc.

In the legislature of Rhode Island, now in session, a memorial was referred to a select committee, but a few days ago, requesting the appointment of a *superintendent of statistics*, with a suitable salary, whose duty it shall be to collect all the information possible relative to the agricultural and other products of the state, its resources of every description, the commerce of the state with sister states and foreign countries, the nature and value thereof, the mechanic arts and manufactures, public education, religion, public health, and such other information as may, from time to time, be required of him, having a bearing upon the industrial and progressive history of the state. The author of the measure, in a

letter to the undersigned, compliments, in handsome terms, the action of Louisiana, and adds that Rhode Island will undoubtedly co-operate.

Massachusetts is far beyond every other state in the pains which she takes to preserve even the most minor particulars relating to her population and industry. It is to this that we may attribute in a degree the rapid advances of that commonwealth, and her course should serve to guide each of her sisters. She appropriates, annually, large sums to the numerous agricultural associations within her limits, in aid of their premiums and publications. On the table before me are a large number of her published reports and documents, furnished kindly by the Secretary of State at my request. A list of these will aid us in understanding the system she adopts, and perhaps stimulate our own efforts.

No. 1.—*Statistics of the Condition and Products of Certain Branches of Industry in Massachusetts*. This is a volume of 400 closely-printed pages, mostly figures, published in 1845, prepared from the returns of the assessors, who were provided with blanks by the Secretary of State. This volume is admirably complete, and is expected to be followed up, at short periods, by similar publications.

No. 2.—*Abstract of the Returns of Agricultural Societies*. A volume of 160 pages, made up from the returns of all the agricultural societies in the state, who, as a condition precedent to the receipt of the bounty allowed, must report *annually* the amount expended by them, premiums allowed, reports of committees, names of officers, addresses delivered, etc., etc.

No. 3.—*Abstract of Massachusetts School Returns*, containing 336 pages, and published annually by the Secretary of State. This volume was digested by the Hon. Horace Mann from the reports of the School Committees in all the 309 towns of the state, which amounted in manuscript, as he says, to 5,500 closely-written pages, and is very full upon even the merest details of her education system.

No. 4.—*Insurance Abstracts*. These are large pamphlets published annually by the state, giving the operations of every incorporated company from returns required by law.

No. 5.—*Bank Abstracts*. Similar annual publications, showing the capital of every bank in the commonwealth, circulation, profits, debts, deposits, resources, dividends, etc.

No. 6.—*Annual Reports of all Rail-Road Corporations*.

No. 7.—*Annual Reports of Lunatic Asylum*.

No. 8.—*Annual Reports of Births, Marriages, and Deaths*.

These are volumes of 125 to 150 pages each, and are prepared with great care from

the returns made by the clerk, etc., in each of the towns in the state. Nothing like this is found in any other state of the Union, and the general deductions made from the tables have high influence in the regulation of life and society.

Many of our large cities have been equally liberal in the documents prepared and published, showing the progress and pursuits of their population. Prominent among these have been Boston, New-York, and Charleston, which have contributed each large volumes of statistics, so condensed and presented as to show everything that could be desired in every department, and to afford the highest and best evidence of the actual condition of the people. Nothing could be more complete and admirable than these volumes. They furnish, as it were, a map of the operations of a city from the earliest period down to the moment that we examine them. Should it not be hoped that our cities, and New-Orleans in particular, the second important, commercially, in the Union, will provide for similar volumes by public appropriations. It affords me great pleasure to say, that a movement has already been made for the purpose by Mr. Jarvis, a member of the General Council.

SILK AND SILK CULTURE.*—ORIGIN OF THE SILK INDUSTRY; EARLY HISTORY; SKETCHES OF PROGRESS; PECULIAR VIEWS AND PRACTICES OF THE CHINESE IN THE PRESERVATION OF EGGS; CULTIVATION OF THE MULBERRY TREE; CONSTRUCTION OF FADING APARTMENTS; MANAGEMENT OF THE SILK WORM; COOONERIES, ETC., ETC., ILLUSTRATED BY CUTS; INTRODUCTION OF SILK CULTURE IN OTHER COUNTRIES; HISTORY OF SILK IN THE UNITED STATES; NATURAL FACILITIES OF THE U. S. FOR MAKING SILK; ADVANTAGES OF SOUTHERN AND WESTERN STATES; COMMUNICATIONS FROM PRACTICAL MEN; GENERAL SUGGESTIONS ON THE SUBJECT.—It is the duty, as it is the interest, of all nations to guard carefully their resources. They should not only aim at the perfection of those arts and occupations with which their citizens are already familiar, but offer every

consistent encouragement for the introduction of other and new branches of industry which may be made to contribute to the supply of their own necessities and luxuries, or produce articles valuable for commerce. It is pre-eminently important that "We, the People of the United States," by the blessing of heaven the most free, the most popular, the most thriving nation of the earth, should *live within our means*. If this is good policy for individuals and corporations, it is infinitely more so when applied to states and nations. Well would it have been for us had we long ago conceived, practically, the importance of this great truth. Land and labor are with us the only legitimate sources of wealth, and our evident interests demand the exercise of such a policy as shall secure the steadiest employment, and lead to the development of these, our *natural capital*. Unpardonable disgrace should attend indifference or neglect in these respects. Unemployed labor, or labor injudiciously or unprofitably employed, should be considered a calamity as carefully to be avoided as famine, pestilence, or war.

We cannot conceive of a greater inconsistency than that of sending from three to fifteen thousand miles for any article of our consumption which our own labor and skill, in the appropriate use of means which nature has provided, might create. And yet it cannot be denied, this *monstrous incongruity* has attached itself to our government and people ever since our independence, and that in reference to an article of immensely more value in the aggregate than any other product of human industry.

That article is Silk, the beauty and richness of which were not over prized, when, in the reign of Tiberius (A. D. 14), its use was restricted by sumptuary laws to women of rank and fashion, to whom the considerations of cost were trifling; or when (A. D. 222) the famed voluptuary of Syria, Heliogabalus, in the extremity of his extravagance, as charged upon him by Roman authors, wore a *halosericum*, a garment made entirely of silk; nor when its purchase required the payment of its weight in gold, which was as-

* J. D. B. De Bow, Esq.—

"I received not long since, through my friend the Hon. Edmund Burke, of the Patent Office, your letter of recent date, in which you solicit for publication my views on the subject of *Silk Culture*. I am ready to improve every medium through which I can contribute to the advancement of this interesting and important pursuit. It gives me great pleasure, sir, to comply with your wish, and I am exceedingly gratified to know that you have considered this a subject of sufficient importance to occupy the columns of your Review. In my opinion, sir, they cannot contain matter of more intrinsic value, or that which more intimately concerns your readers and the general public. The business has had its advocates since an early day in our history, and silk of superior quality has been making for more than a century past. Innumerable obstacles have retarded its progress from the beginning, but enough has

been done to establish beyond cavil the fact that the United States, in climate and soil, and *all* their natural facilities, are peculiarly adapted to the production of silk—and our people equally adapted to its manufacture into the most beautiful and finished fabrics of which the article is susceptible. I believe there are not *ten men* in this nation, who, if they have examined the subject with care, will dispute this position. It has been too often and too amply demonstrated, under the most untoward circumstances, to admit of a single doubt.

"I herewith transmit the manuscript copy of a brief treatise on the culture of silk, which has been prepared in accordance with your expressed desire.

"In the hope that it may be instrumental in awakening favorable public notice; and turning to this enterprise the attention its importance demands, it is respectfully submitted by,

"Sir, your most obedient servant,

"A. C. VAN EPPS."

signed by Aurelian (A. D. 273) as a reason for his refusing his empress so great a luxury. This great mistake has cost us hundreds of millions of dollars, and continues every year to extract from us \$12,000,000 to \$15,000,000 of our best money.

Now all this might have been avoided had we adopted the principle here inculcated. But for this political insanity we should at this day have realized the prediction so often made, that we should become "the greatest silk-producing country of the earth," supplying our own demands not only, but exporting largely of the raw material to Europe. With our national treasure unembarrassed, and our citizens generally engaged in remunerating pursuits, the addition of new staples seems not so imperative, although sound policy would then demand it. But the fact is far otherwise. The absorbing question among politicians for the last three years has been, how shall we increase the *revenue* of the country? And how has this question been disposed of? Has it been settled to the interests of the government, the content and prosperity of the people? Has anything been proposed likely to effect the object?

An alteration of the postage laws has been resorted to, and the duties on imports changed; some contending that a *high tariff*, and others a *low tariff*, or *no tariff at all*, would better answer the end in view; but still, increasing embarrassment is the cry, and, for aught we can see, must continue to be—who knows how long?

We must have a system of postage agreeable to the people, and duties so arranged as to favor home productions and manufactures to the fullest extent. But, after all, we must fall back upon the *pockets of the people*; for if there be not gold there, nor in their hands the means to produce it, we look in vain for it in the treasury, from *any and every* channel.

If, then, the profitable employment of the citizen and the prosperity of the government are so nearly identical, it becomes at once an important inquiry whether the energies of our people are fully developed, and if not, what new object of industry can be adopted, with a view of increasing their staple products and augmenting their income? These questions have received a good share of attention, and, under improved systems of cultivation which have been introduced, our lands have yielded an increased abundance, with a corresponding increase in their quality and variety. The culture of silk, however, by far the most important subject claiming our attention at the present time, has been almost totally neglected by both government and people. It is the object of the following essay to present this subject anew to the consideration of our people and the regard of the government; and we can but believe, that the representations here made, and the arguments adduced, will have the desired effect.

The writer has been so long and so deeply interested in this subject, that it would not be strange if, in the expression of his views, some extreme opinions should be advanced; but we believe no such *extremes*, should they occur, will be found detrimental to the general good. It has been our aim to render every part of our work as correct and practical as possible. All the sources of information to which we have had recourse are of the most established and reliable character.

We would not close our remarks here without expressing our gratification that the pages of the Commercial Review have been most generously offered for the discussion of the Silk Question. We rejoice exceedingly that so popular and influential an instrumentality should at this crisis come forward for the advocacy of a great and noble enterprise in which the whole nation is interested. Its circulation, too, being principally in those parts of our country where the business can be most readily introduced and carried to the greatest perfection, adds greatly to its value as a channel of public communication. It will afford us much pleasure to answer, as we shall be able, any inquiries which this treatise may elicit, and to aid in every possible way the advancement of silk culture at the "*South and West*," and generally.

The discovery that the web of the *silk-worm* could be converted into fabrics; and that this uncomely insect could be made to pay tribute to the necessities and luxuries of mankind, was second to none other recorded in the history of the world. When the length of time during which silk has been made and used, is considered, and the great value always attached to it, it is impossible to conceive the immense aggregation of wealth which has been involved directly or indirectly in its production, manufacture and employment as an article of apparel. If we combine all other substances ever employed for the raiment of the human family, their value can hardly exceed, if indeed it equal, that of the single article of silk.

When the empress *Si-ling-chi** was watch-

* All who have ever written on this subject accord to this Empress, the wife of *Ho-ang-ti*, the credit of having first examined the cocoon of the silkworm with the view of ascertaining its nature, and the possibility of its being rendered valuable.

Their own authors, of the several dates noted, write as follows: "The lawful wife of the Emperor, (*Ho-ang-ti*), named *Si-ling-chi*, began the culture of silk."—(Book on Silk Worms.)

"This great prince (*Ho-ang-ti*) was desirous that *Si-ling-chi*, his legitimate wife, should contribute to the happiness of his people. He charged her to examine the silkworms, and test the practicability of using the thread. *Si-ling-chi* had a large number of these worms collected, which she fed herself, in a place prepared solely for that purpose, and discovered not only the means of raising them, but also the manner of reeling the silk and employing it to make garments."—History of China, by P. Mailla—written, according to Chinese Chronology, 2,602 years before Christ.

ing the curious operations of this insignificant insect in the forests of Northern China, over four thousand years ago; and even when she succeeded in domesticating the worm, unwinding the fibre and converting it into an article of dress, she could have formed little conception of the variety of its subsequent uses, or the extent to which it was destined to mingle in the commerce of nations then unborn, and in portions of the earth unknown for many centuries afterwards. It is almost incredible *now*, with the statistics of four thousand five hundred years before us, that, from the eggs of an insect so minute, that at its hatching, thirty thousand scarcely weigh one ounce, should originate an article of such unequaled magnitude as that of silk. Millions of persons are employed in cultivating the mulberry tree and rearing the silkworm; and other millions in the operation of filatures and manufactories; while thousands of ships, and magnificent storehouses, with their numerous attendants, are required for its conveyance and distribution through innumerable avenues to the hands of its consumers, whose number equals the entire population of the civilized world—for *who does not wear silk?*

Very appropriately has the empress, in whose hands this industry had its origin, been styled and deified as the *Goddess of Silk Worms*; and we can almost justify the yearly homage paid to this goddess by the Chinese peasantry.

If the importance of this discovery was not at first realized, that they did not long continue ignorant on the subject, is apparent in the fact that it became at once the favorite pursuit of the most distinguished, and was introduced at each recurring season by royal example; and before it had time to acquire a name, it was surrounded by the government with every possible protection which the ingenuity of that jealous nation could devise. So successfully was this protective policy adopted and adhered to, that, up to the middle of the sixth century, it does not appear to have been supposed, beyond the confines of China, that silk was the product of a worm. Even the Persians, who had long controlled the carrying trade between China and other countries of Asia, do not appear to have dreamed of the origin of the precious commodities composing their commerce; and, but for the most ingenious stratagem by which it was wrested from them, it is difficult to determine how long it must have remained a secret. Towards the close of the sixth century, this product of the Chinese had become so universally admired, and so highly valued, that, notwithstanding the exorbitant prices exacted for it, it was impossible to obtain a supply. With a view of opening a new medium of communication, Marcus Antoninus undertook to supplant the

Persian monopoly—but his embassy was rejected, in common with all other applications for foreign intercourse by any except those whose integrity had been thoroughly tested and approved. This movement excited the spleen of the monopolists, and its failure encouraged their avarice. The passion for dress which the Romans carried with them to Constantinople, served to increase the demand for silk beyond all precedent—and the Persians, in their dreams of gain, carried their impositions beyond all endurance.

This was a crisis of the greatest interest in the history of silk, and calls for particular notice. An eminent author, in reference to the same period, writes as follows: "A war with the Persians occurring in the reign of Justinian, induced that monarch to obtain supplies from a more eligible channel. Through a deficiency of the requisite experience and qualifications necessary for so difficult an undertaking, Elashan, King of Axuma, and Esimiphæus, Governor of the Hermorites, in Arabia, to whom, for this purpose, Justinian had made application, failed to fulfil their engagements; and silk, in consequence, rose at Constantinople to a height before unknown. This the partial supplies afforded by the Phœnician manufacturers, would have considerably relieved, had not Justinian, with a blind rapacity, that, in his aim to augment the revenue, effectually defeated itself, imposed heavy duties on the importations, which became absolutely prohibitory. In consequence, the merchants were ruined, the scarcity of silk was equivalent to absolute privation, and the failure of a revenue, whose increase was contemplated by Justinian, was a practical sarcasm on his avarice."

Thus we have, in the history of silk, arrived at a very important and memorable crisis. Silk was produced, even from the earliest ages, in regions congenial to its culture, where, in consequence of the blessings it confers, the inhabitants proclaim themselves *celestial*, but assiduously withhold all knowledge from what the benefit is derived.

An insect, as if in some land of enchantment, labors, spins, and dies; and without leaving itself even a sarcophagus, bequeaths its house, more valuable to man than the proud monuments of the Egyptian architect, its robes, more golden than Jason's fleece, and all its estate, by the bale and cargo, to the men of Hesperian climes, who know not either of its existence, or the mystery of its operations. The elegance of the fabrics is admired by all; Europe invites the commerce; a difficulty unmanageable in the ordinary course of things occurs; a crisis arrives; the old epoch is closed, and a new era, most important in its history, arrives. How frequently has relief come, not only at the moment of extremity,

but by the most unexpected means. Justinian failed in his diplomatic application to the Arabian princes, as well as his predecessor had done at the Chinese Court; and his very attempt to force a trade was the means of its almost total extinction. But how could it have been foreseen that what emperors, ambassadors, and merchants failed to accomplish, would be effected by means so unlikely as by two comparatively obscure Nestorian monks? The preachers of the doctrine of Nestor, exiled by the government of Byzantium, had fled to India; and missions, convents, and bishoprics, by their patriarch resident in Persia, had been, according to the testimony of Cosmas, established in every direction. Two of the monks penetrated to the country of the Seres. With curious eye they had observed the dress of the Chinese; the manufactures of the silken fabrics; and the millions of insects, whose education was the care of queens, converting the leaves of a tree into silk. All the manipulations requisite, from the embryo state of the little animal, to the production of the costly material, were marked with intense interest.

The secret was out! two monks in possession of it—the knowledge to benefit myriads was entrusted to two—the perils of traversing a vast continent were yet to be encountered—a risk was to be incurred—no insurance was effected, but that of Providence: thus all was safe; and the two monks, our benefactors, bequeathed a mystery, hid for ages, as a legacy to a western hemisphere. Aware of the solicitude of the Europeans on this subject, the monks repaired to Constantinople, and first revealed to the emperor the secret that *silk* was produced by insects, whose eggs might be conveyed to his dominions.

Were we to indulge in the conjecture what, most naturally on such a momentous occasion, was the passion chiefly excited in Justinian, at this important juncture, when a report, than which none could be more interesting to the secular concerns of man, was first announced to his ears, our charity might have inclined us to point to philanthropy, had we not ascertained the character of the man. With him, on several occasions, self was a universe, and all within it his minions, whose interests were to be consulted precisely to the point where they concerned his own. By the promise of a great reward, the monks were induced to return to China, elude the vigilance of their jealousy, obtain the eggs, and to confine within the narrow precincts of a hollow cane, what was subsequently to create machines and factories, fill warehouses and ships, and become inexhaustible mines of wealth to nations. They succeeded; and in the year 552, they were in Constantinople, and their cane, like Noah's ark, contained a family, whose posterity are now filling regions wider than those peopled, within the same time, by Suen, Ham and Japhet. "These insects

thus produced," says Lardner, "were the progenitors of all the generations of *silkworms* which have since been reared, in Europe and the western parts of Asia;"—to which may now be added America and Africa—"of the countless myriads whose constant and successive labors are engaged in supplying a great and ever-increasing demand. A cannel of eggs thus became the means of establishing a manufacture which fashion and luxury had already rendered important, and of saving vast sums annually to European nations, which in this respect had been so long dependent on, and obliged to submit to, the exactions of their oriental neighbors."

No sooner is this new and interesting colony in Europe, than the avarice of Justinian seizes the cradle of the infant concern. His own treasurer had the control, the monks the direction, weavers brought from Tyre and Berytus, were the creatures of the new monopoly, and his became the prerogative to fix the price which his subjects should pay for the indulgence of their vanity. The price of silk, by this means, became eight times more exorbitant than before the introduction of the silkworms; an ounce weight of a fabric of *common colors* could not be purchased for less than six pieces of gold, but the royal purple was of quadruple value. Fortunately for the public good, the oppressors of mankind live not forever: Justinian died; and the monopoly ceased. The people of western Asia and Europeans discovered that neither the mulberry tree, nor silkworm, wanted either Chinese climes, or the care of a Justinian to foster them. Mulberries were planted in all directions; and the insects fell to work with haste as eager, as if they had never known that their ancestors had been silkworms royal to his highness Justinian. After the death of this emperor, (A. D. 565,) we find the culture and manufacture of silk transferred to Greece, especially Peloponnesus, and to the cities of Athens, Thebes, and Corinth.

Soon after, the Venetians entered into commercial relations with the Grecian empire, and conducted the carrying trade, for several centuries, to the western parts of Europe. Such was the estimation in which this manufacture was then held, as appears from the example of Charlemagne in the year 790, sending two silken vests to Offa, King of Mercia, that it was considered worthy of being made a royal gift. Greece, notwithstanding all discouragements consequent upon the continued and rapid decline of the Roman empire, continued to excel all other nations of Europe in the quality of her manufactures. She alone, for near 600 years, possessed the valuable breed of silkworms; soon produced wrought silks adequate to her own consumption; a recourse to Persia for a supply ceased, and a material change followed in her intercourse with India.

We deem it unnecessary to dwell at greater

length here upon this part of our subject, and shall therefore give our attention to that which will be more interesting and profitable: the means by which the Chinese attain so much perfection, and secure such uniform success. Disease among the silk worms there is so uncommon as scarcely to have attracted the attention of their authors; it would hardly be supposed, from what they say, that the silkworm is subject to ailments of any kind. It is positively asserted that they do not lose one worm out of a hundred by disease; which seems to have been a matter of much surprise in France, where the most successful establishments calculate upon a loss of fifty per cent. It is very reasonable to suppose that, in this extended experience, we shall find some peculiar processes by which they are secured against the casualties common to other countries.

The very circumstances under which the silkworm was abstracted from China, precludes the possibility of any very extensive and accurate knowledge of its management, and every attempt to obtain such information since has been fruitless until within the present century.

When the spirit of inquiry and inquisitiveness can no longer be controlled, and valuable secrets are not safe through the possession of walled empires, access has at length been obtained to Chinese libraries; and works treating extensively and minutely of this entire subject have been carefully reviewed. They form a part of their works upon agriculture, of which there are several hundreds, included in a collection of one hundred and sixty thousand volumes of the most valuable publications in the Chinese language; but among all this immense library and the twelve thousand volumes composing the royal library, there are but three books devoted exclusively to silk culture as a distinct branch of their industry. These were written long since and have passed, in fact, through a new edition within the last two or three hundred years. To the essential parts of all these works we have incidental access through recent translations into the French language by M. Stanislas Julien, at the instance of the Minister of Public Works, of Agriculture and Commerce; to which is prefixed a valuable introduction by M. Camille Beauvais. While in manuscript this translation underwent a most critical examination by M. Louis Hebert, whom the French government employed for some time upon the coast of China with the special design of studying the methods of those countries, and of bringing back any precious varieties of mulberry trees and silk worms which were unknown to French culturists. This, with other works of great value treating of this subject, are included in a collection of one of these,* to which particular reference will

be made in another part of this treatise, a work on "Filatures," by M. Ferrier, inculcating precisely the views we have entertained and urged for the last three years, and which alone can secure the success of silk culture in any country.

From the work first named, together with a book of Chinese painting prepared for Dr. Stebbins, of Northampton, Mass., which has been fully explained to us by Sum-Sing, a Chinese artist of the Chinese Junk recently in this city, who is entirely familiar with the production of silk in his native country, we shall be able to give a very full and correct exposition of the principal methods practised in China. We shall do so more in compliance with a general curiosity to know their management, than from faith in the superiority of their practices. In their cultivation of the mulberry tree and treatment of the worm—we can learn much; but their care of the eggs, which we shall notice elsewhere, consists of a routine of unmeaning attentions, which one would suppose must prove entirely destructive to the embryo worm.

In every branch of the business we may learn much from their excesses. If they are extremely careful, it will be found a less dangerous error than the irregular and careless manner in which it has been managed in this country as well as in many parts of Italy and France.* We shall first notice their treatment of the mulberry. No expedients have been left untried that were calculated to lead to the general propagation of this tree. In some provinces men were compelled to do it; while others succeeded better by liberal bounties. Hence we read: Tchün-in, being governor of the province of Kiente, ordered every man in the nation to plant fifteen feet, on each acre, with mulberries.

The emperor gave to each man twenty acres of land, on condition of his planting fifty feet with mulberries; (Memoirs upon Provisions and Commerce.) When the agricultural labors are terminated, or when rain prevents persons from working in the fields, every thing must be taught relative to the mulberry tree. (Annals of Northern China.)

The Emperor Hien-tsung, who ascended the throne in 806, ordered all the inhabitants of the country to plant two feet with mulberries in each acre of their grounds. (Annals of the dynasty of Thang.)

The first emperor of the dynasty of Song (960) promulgated a decree to prevent the destruction of the mulberry and jujube trees. (The leaves of the latter may be used for feeding silkworms.) [History of the dynasty of Song.] If, among the people, men are found who grab up the uncultivated ground and plant a great quantity of mulberry trees, only

* More than a hundred volumes of valuable French works recently presented to the American Institute, by M. Vatteimare.

* And the fact that success has attended the efforts of culturists in this country, in spite of all hindrances, is an evidence of its uncommon congeniality.

the ancient tax shall be exacted from them. (Same work.)

Their works abound with similar passages, showing the care ever exercised to promote the most extensive growth of the mulberry tree, of which several varieties are used, corresponding with the character of the climate and soil of the province for which they are designed. The most common and generally approved appears to be a white mulberry bearing an abundance of thick, glossy leaves about as large as a man's hand. In preserving seed, the largest fruit is selected and both ends cut off, the seeds of the middle only being considered fit for use. These are washed, dried in the sun, and immediately planted in a bed of rich earth, previously prepared for the purpose. These are kept carefully watered and free from weeds. In the spring the small trees are taken up and transplanted in grounds suitably prepared. They are planted in rows four feet apart each way, and cultivated with a hoe and spade. In the spring of the year, when they are considered sufficiently matured, they are again removed and planted into permanent orchards, where they are set about thirty feet apart. Another mode is to gather the fruit, which is ripe in June, crush the pulp with the hands, and wash several times; when the seed is separated it must be dried in the *shade*. Ten acres of fertile land, or, better, land for a long time uncultivated, is prepared, where the mulberry seed, mixed with millet seed, is sown and left to grow up together. The millet ripens and is removed by the reapers, and the mulberries either removed or allowed to remain upon the same ground.

The tops are cut off, and the foliage from the shoots starting the following spring is used for feeding. Another writer says in substance as follows: When the time for sowing has come, the seed must be mixed with ashes from the branches of the mulberry tree, and then soaked until they become soft. The next day the seed must be washed with care, and those that float rejected. The full seed must be exposed to the sun until the water absorbed is entirely evaporated, when they are sown and do not fail to flourish. In another work the subject is treated differently, still conflicting somewhat with the preceding. We can give only the ideas. None but new seed should be used. This should be sown in the shade or covered with a sort of tent. The shade of hemp is unfavorable, that of millet still more so. Between each plant five to seven inches should be left, and kept carefully watered until they attain the height of three feet; the shade should then be removed. In November the trees should be cut even with the ground, dry grass spread over them and burned; taking care not to have the fire too hot or long-continued. The ground is then covered with decomposed vegetable manure. In the

spring the surface is raked clean and the trees kept well watered. Fine shoots spring up early, many of which, by fall, attain the height of six or seven feet. A distinction is made between these and a smaller growth, and each is treated in a different manner: the larger growth being generally preferred to those of a still larger variety, and are termed dwarf mulberry trees. The ground to receive these is prepared as follows: the location must be well cultivated and manured. In one acre about two hundred and fifty holes are dug, each two feet square and two deep, into which is spread about a half bushel of well-rotted manure, mixed with an equal quantity of earth, all made soft by water. Into this compost the tree is firmly placed, the top of the stalk cut off even with the surface of the earth, and the whole filled with well-decayed earth.

The next day this is trampled down so as only to leave the hole half full; the remainder filled and slightly packed. A small hill is made over the top of the stalk, which must previously be burned with a hot iron, so that the shoots will all start from buds under ground, thus giving them greater strength and security against winds and storms. Several buds will send out trees, and in order that they may not become too thick, only two branches are cut down close to the ground every year, and earth covered over, so that all the new sprouts of the succeeding year may start from buds under the ground. As the roots become strong, a greater number of branches are allowed to remain, until, in a few years, an immense mass of foliage is produced, and the quantity of roots formed is astonishing.

The plantation of Dr. Stettins, of Northampton, Mass., is a good illustration of this mode of culture. He has a small orchard of Canton mulberries, which, from June to November, presents a most beautiful sight; and the amount of foliage produced is incredible.

This variety of mulberry was procured directly from China for Dr. S.,—and is doubtless the same variety preferred in the best silk-producing districts of that empire. It was recognized as such by a native Chinese, who recently examined it, pronouncing it the *same*, only presenting an appearance of greater thrift and perfection. It corresponds very nearly to the *Moretti*—if, indeed, it be not the same, which some of our best judges believe.

From these seedlings, cuttings are taken; and in this way the mulberry tree can be multiplied indefinitely. A general preference is to be given to this mode of propagation, as the variety of the tree can thus be retained in its vigor. In this something like the following practice is observed. The ground is selected and prepared for the cut-

tings, as for trees just described; and soon after the buds begin to start in early spring, branches are cut about one foot in length and each end burnt. A part of the buds, if there are more than three or four, are removed. The only danger to be guarded against, as attending this method, is the effect of the sun of midsummer—but if proper care is taken, a single plant is seldom lost. It is a pretty general practice to plant a few hemp seeds on the sun side of the hills to afford a shade. The following spring, the trees, with the cuttings attached, are taken up and removed to the grounds where they are to remain, and there planted with the same care as before, in rows about twenty-five feet apart, and ten feet apart in the rows. The ground between the rows may be plowed, but never between the trees. The foliage is used the second year. In another work, a more particular account is given nearly as follows: towards the end of autumn, when the cultivators have much leisure, the grounds intended to be planted with mulberries the following spring, must be selected, and all the holes dug and supplied with manure, so as to diminish the work of the spring when so many other things demand attention. The grounds should be raised on the south in order to retain the snows of winter and the rains of spring. In the last month of the year (January) the branches intended for planting in the spring should be cut, and the wounded part scarred by passing it quickly through the fire. They are then bound into bundles of about forty-five each, and laid in a hole, prepared for the purpose, about the length of the trees, and three or four feet deep. Bundles of rice straw are placed between those of the trees. These deposits of branches are covered with a thick bed of earth, and thus preserved in perfect safety. After *T'chun-fen* (21st of March) the holes prepared in the autumn, are opened—manure, earth and water mixed in, and twenty or thirty millet seeds planted at the south side. The trees are then removed for planting. Each branch is bent up in the shape of a hoop and tied in that position by a straw rope; and thus planted in the middle of the hole, and covered with three or four inches of earth. If the buds are started two or three inches they are covered deeper, and the earth packed firmly around them with little hillocks of light earth on the top. They must be shaded and kept moist. The trees from the buds grow rapidly, and make it necessary to remove some of the lateral branches. At three years old they become fine trees. Some persons who wish dwarf trees, cut off only the extremities of the branches and plant them upright, so that the top just arises out of the ground. When this is done several twigs are put together and thus planted. Others place the boughs in a raddish and plant

it in a small square hole. These thrive well.

We cannot notice further this part of the work, though much more is said, but with immaterial variation from what we have already given. These observations give a general impression of the plans pursued as well as they can be determined from this translation, which is in many parts quite crude and indefinite. None of the practices described, strike us as possessing peculiar excellence—but *one* important principle is carried out by every cultivator—a principle very imperfectly appreciated amongst us—it is, that the mulberry tree, to produce good and abundant foliage, must have the advantage of rich soil and careful cultivation. They not only select the best lands for their plantations but manure plentifully besides. Liquid manures are highly recommended and extensively used; also the sweepings of the cocooneries, ashes of rice straw, various aquatic plants, and paste made of beans, hemp and cotton seeds, besides the ordinary manures. Great use is also made of the sediments of canals and ponds, which are often drained for this purpose. The plantations are generally surrounded with walls or hedges to prevent injury by animals. The earth around the trees is kept perfectly clean and loose, by frequent weeding and the use of the hoe and spade. No noxious plants or trees are allowed in the inclosure. Neighboring cultivators not unfrequently associate together for the purpose of managing the business to better advantage by a division of labor. Their orchards in such cases are included in one large inclosure, proportionally subdivided by light hedgeries, to prevent disputes, to which they are so much inclined. Grafting and budding are practised to a considerable extent, and are thought greatly to improve the quality of the foliage. The leaves thus produced are larger and thicker, and seem to contain less unwholesome juice.

This requires a good deal of trouble, but we are inclined to think the plan a good one, where it is intended to have permanent orchards. It is being extensively introduced in the south of France.*

The construction of feeding apartments next claims our attention. These are generally built in secluded locations, and near or over the water, when it can conveniently be done; that they may have the advantage of extreme quietness, and freedom from impure air and injurious insects. They are so constructed as to admit of the most perfect ventilation, and yet as perfectly to prevent

* The first nursery we have ever seen anywhere was that of Mr. L. P. Finells in this city. These trees were grafted white mulberries imported from the Cevennes Mountains in France, and for some time occupied a garden in Broadway; and were removed a year or two since, we think, to some part of Long Island.

the admission of external air, when unsuited to the health of the worm, and always so as to govern the degree of light.

The greatest importance is attached to a uniform temperature, and means provided for securing it. In the centre of the building is constructed an oven, of which the following is a description. In the middle of the house a hole must be dug, of which the size must be proportioned to the dimensions of the house.

The ordinary size of this hole is about four feet square. On the four sides, a square brick wall, cemented with mortar, must be raised two feet in height. Cowdung, well dried, must be taken and reduced to powder, and the bottom of the hole covered with a bed of this powder three or four inches thick. On and in the middle of this, a layer of small pieces of dry wood must be spread, at least five inches in diameter, which has been cut in the last month of the year. Mulberry, elms, acacia, or any kind of hard solid wood may be used. Upon this another bed of powder must be spread, well beaten down, so as to fill all the openings between the sticks; for if any space be left, the fire would produce a flame which would be injurious, besides causing too rapid a consumption of the fuel. With these alternate layers, the hole must be filled and packed down as tight as possible, and then rounded up with the same. Seven or eight days before the hatching of the worms, live coals must be put on the top and covered over with hot ashes. The mixture readily takes fire, and emits, for six or seven days, a black and yellow smoke. One day before the hatchings of the worms, the door must be opened to dissipate the smoke, and then carefully shut. From that time the whole contents of the oven are on fire, emitting no smoke, and can be preserved for a month or two without becoming extinguished or materially diminished. The warmth produced is mild and agreeable, and it can hardly be perceived that there is a fire in the apartment. It is well to surround the top of the oven, to the height of one or two feet, with a high brick wall, so that the heat may ascend to the middle of the room, and there spread in an equal manner. This will also prevent those persons who attend the silk room at night from falling into the oven. The house being constructed of dry materials, readily becomes warm and retains the heat. When the worms are to be removed from the nursery, the old paper on the windows must be replaced by that which is perfectly white and clean. The windows are covered with screens or mats, to prevent the escape of heat, and regulate the admission of light. Connected with the main building is a nursery, carefully constructed, for hatching and feeding the young worms. It is generally built fronting the south. These are fitted up

with numerous small frames and shelves, and only light enough admitted to distinguish the moulting from the feeding worms; and this is obtained mainly through dormer windows above the frames. Even with the ground, pipes, or air conductors, communicating with the outside, must be placed at regular intervals, and arranged so as to be opened and shut at pleasure. The nursery building is also provided with an oven similar to the one described, only smaller, and also a small stove in each corner, in niches prepared for the purpose.

The internal arrangements for feeding do not vary much in different provinces. We shall refer to only two, which are more generally used than any others, as they are considered the best. One consists of frames two feet long and two feet wide, supported at the ends by slats fastened to upright posts extending from the floor to the beams or ceiling. The one at the bottom prevents the dampness of the ground from ascending, and the one on the top screens from the dust of the apartment. The other arrangement, which appears to be an excellent one, —especially for nurseries—is represented in the cut, which is given in the Commercial Review.

The construction of this frame is very simple; the hurdles, which are made of split bamboo, very light and easily handled, admitting an unobstructed circulation of air through and around the frames.

With this reference to the feeding apartments, we shall notice, very briefly, the methods of hatching, feeding, and the general management of the silkworm from the egg.

The time of hatching corresponds very nearly with that of Virginia, and the eggs are retarded or forwarded to correspond with the character of the season. The care bestowed upon the eggs by the Chinese is almost incredible, and differs altogether from the practices of this country, and we can hardly be induced to attach to them any advantage.

From about the first of December up to the time of their hatching, they are subjected to repeated washings in brine and river water.

To these baths their authors attach great value, as securing uniform hatchings and vigor of constitution. The subject deserves a passing notice in this place.

In a work entitled, HOANG-SING-TSEFG, the author observes: The eighth day of the last moon, the eggs must be dipped in water where the ashes of the mulberry branches have been boiled, or the ashes of grass. They must be taken out at the expiration of one day. The twelfth day of the second moon, a bath must be given to the eggs, on the morning of the period called *Thsing-*

ming, (5th of April;) then they must be wrapped up in cotton paper, and deposited in the kitchen. Wait until the mulberry leaves are as large as a teaspoon, then envelop the eggs in cotton; covering them at night with garments that have been worn during the day; and in the morning wrap them in blankets.

When the eggs are hatched, the worms must be warmed by artificial heat; but so long as they are not out of the egg, they ought to be well taken care of, and hatched by the heat of the fire. When it is desirable to soak the leaves of paper, covered with eggs, the ashes of the mulberry must be used; the leaves should be moistened and powdered with the ashes. Afterwards they must be rolled and soaked in water where a certain quantity of salt has been dissolved. If the rolls of paper swim, they must be kept under water by placing them under a China plate.

The papers ought to be taken out on the twenty-fourth day. They must then be washed in running water to remove the ashes. Afterwards, they can be hung up in the cool air, and the eggs will hatch in due time. The twelfth day of the second moon, leaves of the plants called *thai* and *ye thsai*, blossoms of the leek, peach tree, and white beans, must be taken and crushed in water, and this used as a wash for the eggs.

Many persons preserve the eggs in bamboo boxes, where they are exposed to all the changes of the atmosphere. If they are subjected to sudden transitions from cold to extreme heat, or the contrary, it produces fatal results. The worms thus injured in the egg, have a yellow appearance on hatching, and are never worth the trouble of raising. They may be compared to a child that has contracted disease in the womb. At its birth it is weak and feeble; and such innate ailments generally extend through life.

When one wishes to preserve eggs by this method, the papers should be spread on bamboo boards, secure from the sun or wind. They should also be covered with silk cloth, to prevent butterflies or insects from the cotton plant eating them. In the winter, when there is a body of snow, the leaves containing the eggs should be spread upon the snow for twenty-four hours, and then placed on the boards and covered as before.

When spring comes, they must be attentively watched, and every change noted, that their hatching be properly provided for. Powdered cinnabar must be taken, diluted in warm water, and the eggs bathed in it. The water should be kept at the temperature of the human body.

Before the eggs are hatched, the papers should be weighed, and the exact weight written on the back of the sheets. When

they are hatched they should not be separated from the paper. Many persons, as soon as the worms appear, detach them from the paper by means of a small broom or quill; but these little beings, as delicate and slender as a hair, or a bit of silk, cannot support the wounds given them by the broom or quill. The better way is to cut some tender leaves into small shreds, and lay them carefully on the worms, to which they will speedily attach themselves, and can be removed without hurt.

The business of the feeding is entrusted to persons who confine themselves exclusively in the silk-rooms. These attendants are required to be scrupulously clean and particular, and to study every want of the worm, and to meet them with a prompt and appropriate supply.

The following things are named as being offensive to the worms, and to be avoided:

- 1st. Silkworms do not like to eat damp leaves;
- 2d. They do not like to eat warm or wilted leaves;
- 3d. The newly-hatched worms do not like the smell of fish fried in a pan;
- 4th. They do not like to be in the neighborhood of persons who pound rice in mortars;
- 5th. They do not like to hear strokes on sonorous bodies;
- 6th. They do not like men who smell of wine to give them food, or transfer them from place to place;
- 7th. From the time they are hatched until maturity, silkworms dread smoke and odorous exhalations;
- 8th. They do not like to have skin or hair burnt near them;
- 9th. They do not like the smell of fish, musk, or the odor of certain herbaceous animals, such as the goat, &c.;
- 10th. They do not like to have a window, exposed to the wind, to be opened during the day;
- 11th. They do not like the rays of the setting sun;
- 12th. They do not like, when the temperature of their habitation is warm, to have a sudden cold or violent wind introduced;
- 13th. When their habitation is cold, they do not like a sudden change to extreme heat;
- 14th. They do not like dirty or slovenly persons to attend them, or enter their room;
- 15th. Care must be taken to keep all noxious affluvia and filth distant from their apartments.

When the worms are first hatched, they are fed with the most tender leaves, cut into fine shreds, and lightly spread over them with a sieve.

In the space of one hour (two of ours) they must receive four meals, making forty-

eight feedings during the first day and night. Feed must be given, without fail, both day and night. If this course is pursued, it follows that they sooner attain their maturity than if they are neglected. When they can be made to mature in twenty-five days, the worms of a given space will furnish twenty-five ounces of silk. If twenty-eight days, only twenty ounces can be obtained. If the time be one month, or forty days, only ten ounces will be made. In feeding, the attendants are required to visit every frame with the greatest attention, and feed with perfect uniformity, that the worms of each day's hatching may not become irregular in their moultings.

The feedings are less frequent as the worms increase in size. It is common, beginning when the worms are very young, to use rice flour. It is sprinkled lightly over the frame immediately after the worms have been fed. When this is done, the leaves require to be dampened.

Dried mulberry leaves, finely powered, are sometimes used in the same way. It is thought to strengthen the worm, and cause it to make a more perfect cocoon. One of the most accurate works, treating of this subject, says :

The leaves which are given them ought to be neither wet with dew nor dried in the wind or sun, nor impregnated with disagreeable smells; for as soon as they have fed upon such leaves, they will contract diseases. If care be taken to preserve, in advance, a sufficiency of leaves for three days, there will be nothing to fear from long rains nor a want of food.

The space of one day and night is, to the silkworm, like the four seasons of the year.

The morning and evening answer to spring and autumn, and the middle of the day and night to summer and winter. In these four periods of the day, the weather is never the same. When a good fire is preserved in the silk-room, great attention should be paid to keep it of a uniform temperature during all parts of the day and night. The matron should wear only a single garment, and regulate the temperature according to the sensation of heat or cold she experiences. If she feels chilly, she will judge that the silk worms are cold also; and so when she experiences oppression from heat, will the worms be affected. An increase of heat immediately after feeding encourages the appetites of the worms, and causes them to eat with great avidity.

To effect this, a long stove, placed on a hand-barrow, is used. When the worms have been fed, and had time to ascend the leaves, this stove is carried by two men through the aisles, until a gentle heat has diffused itself among all the hurdles. The fire in this stove should consist of burn-

ing charcoal, so as to prevent smoke, and covered with ashes, to prevent too brilliant a flame. When the worms have finished their eating, the stove must be carried back. This is repeated at each feeding, if the air of the room is in the least chilled.

The various moultings are attentively observed, and every preparation made for the necessities of the worms. They are not suffered to remain upon their moulting beds for any length of time after their awakening; but are removed* promptly to fresh frames, covered with rice straw, crushed in a mill.

The rapid growth of the worms renders it necessary to remove and separate them, constantly, which is done with the greatest care and affection. Any neglect or carelessness may be followed by diseases and losses. The weakness and delicacy of the worms should never be lost sight of.

Entrance of the Silkworms into the Cocoons.—When the worms indicate a desire to spin, they are removed to cocoon rooms, which are generally constructed separately from the feeding apartments. These rooms are provided with various descriptions of winding-frames. As this has been, and is yet, a subject of much discussion and difference of opinion in this country—it claims at least a passing notice. A country so long engaged in making cocoons—must necessarily have acquired a pretty accurate knowledge of the best methods of spinning—this would be our judgment of any other country, save China, and is doubtless true of them to some extent, notwithstanding their unreasonable adherence to ancient usages.

We have just said that the spinning is done by distinct rooms. In the southern countries these are generally placed in the house, as fewer worms are there fed; and besides, the early rains, occurring at the spinning season, forbid their being placed in the open air. At the North, the rooms are larger, and placed outside of the house, that there may be no obstruction in the circulation of the air. A dry and warm place must be selected, in order that neither cold nor dampness can penetrate into the interior of the cocoon rooms. When the worms approach their maturity, a fire must be lighted on the ground where the room is to be located, until it is perfectly dry; afterwards the remains of the fire and ashes must be swept away. One description of cocoon room is constructed as follows.

The floor is made of plank of the fir tree, six feet long and three feet wide. A frame, pierced with large holes, must be made of thin bamboo from which arrows are made. In these holes some rods must be inserted;

* In the removal of the worms, a frame of network is used, somewhat similar to those used by many persons in this country.

then long and large bamboo branches, stripped of their leaves, must be cropped above. The room must be covered with a framework of woven reeds. The silkworms will here have a place where they can establish themselves in safety without fears of falling. When the interior is well arranged, where it affords necessary depth and security, the worms may be successfully spread over it. At first, the frame must be a little inclined until the worms have voided their excremental matter, which always precedes the formation of their cocoons; and afterwards warmed with a small brazier, or pan of live coals. When they have begun to inclose themselves in their cocoons, the heat must be increased. They must never stop in their work. If the temperature be too cold they walk upon their silk and cease to spin.

Some persons, particularly at the South, where silkworms are fed more for amusement than profit, remove the worms, when they are ready to spin, to their own houses. They spread short stalks of dry plants upon the frames on which the worms were fed, and in these beds of branches they deposit their cocoons.

Another plan is to construct long sheds of light framework, covered with straw mats, and in these place their cocooneries when the worms are ready to enter them. They are set in rows on each side, with a passage in the centre large enough for a man to pass through. As fast as they are needed the rooms are provided with shelves covered with dry branches, on which the worms are placed. When the necessary number have been installed here, they are covered with double mats. These mats are not so closely formed as to prevent the admission of air. Artificial heat is recommended here also.

Touran-Tso, or Round Cocoon Rooms.—The centre is first established and the circumference divided into five parts by pine boards. Five poles are then planted and tied together at the top and then surrounded with rush mats. Dry branches are laid all around against the sides, against the mats where the silk worms are to ascend. When the worms have been placed in, the lower part is surrounded with rush mats and covered high up with straw in the form of a cove.

Chan-Po.—This term signifies a frame covered with small protuberances or hillocks. The frames are woven of split bamboo reeds, and placed upon a stage or table, supported on each side by wooden pillars about six feet high. The small elevations are made of rice or wheat straw, cut of equal length and twisted together at the top; and then placed upright on the frames.

It is necessary to cover the frames with a slight bed of short straw, to prevent the worms falling through between the reeds.

At the bottom of this frame chafing-dishes filled with charcoal are placed four or five feet apart. When the worms are put on the frame only a little fire is necessary to induce them to work, and they will not be seen to climb and move about wasting their silk. As they enter their cocoons the heat must be increased by the addition of burning charcoal to the chafing-dishes. As the silk is thrown out by the worms, it dries, and immediately hardens, which is the reason why the silk from these districts so long retains its strength and receives such brilliant dyes, which is never the case where the worms spin in a damp and chilly atmosphere, as is generally true of most other constructions for spinning. Another spinning-frame recognizing the same principle is highly spoken of. These frames are of bamboo net work, with interstices large enough for the formation of the cocoons.

They are intended to be placed within inclosed cocooneries similar to those described, and present peculiar advantages, as the worms are not suffocated by masses of branches; while the heat and air have free circulation.

The French provide for the spinning of their cocoons a "cabin" of the following description.

Take a round willow basket, which dress with brushwood, putting the wood round two-thirds of the basket, and leaving the other third open for putting in the worms, and to give an opportunity to clear away their litter. Then pull the ends of the wood together at the top, so as not to press too close upon each other, and so tie them with a little twine or pack-thread, to keep them in their place; after which you put a paper cap, pretty large, upon the top of the wood, it having been found that the worms are fond of making their cocoons under a cover of this kind, as it affords an opportunity of attaching some threads of silk to the paper, which enables them to fix their cocoons the more firmly in their place. In putting up the cabins on the stage erected for this purpose, the two rows of brushwood at the extremities of the stage are made much thicker than the others, especially for six or eight inches above the stage or shelf, to prevent the worms from getting out at the ends, and falling over the stage. In putting up the other two rows, you lay a piece of wood or reed across the stage for each row; and in putting up the brushwood you make the first turn to the right and the second to the left, and so alternately, keeping the reed in the middle, which binds all fast. In dressing the stage with the brushwood it is advisable to cover the pillars which support it, and to cover also the top of the stage with the same, that the worms may find a convenient hiding-place wherever they wander. In construct-

ing the cabins great care must be taken to put up the brushwood in such a manner as to allow a passage for the worms between the different branches, which, however, should not be too wide; and it is well to make a great number of points or butts touch the shelf, because it affords the greater opportunity to the worms to mount.

Many people at Montauban put roses or sweet-smelling flowers upon the pillars which support the stage, and in other parts of the room, with a view to sweeten the air.

In forming the arches of the cabins, there is always a little opening at the top of each pillar, occasioned by the curve or top of the circle. Care should be taken to make this opening pretty wide, because it has been observed that the worms make choice of this opening to fix themselves in forming their cocoons. The cabins may, in this way, also be made to accommodate a greater number of worms. The most irregular and crooked brushwood will make the best cabins. (The scrub oaks growing in many parts of this county would make fine cabins.) The tops should be intertwined, thus forming as many interstices as possible. (The materials for the cabins should be ever ready, that whenever the worms show an inclination to mount, you may always have a house to place them in.)

When the worms have commenced their spinning, care must be taken not to suffer the cabins to be touched; because, when they begin to work, the first operation is to fix many threads of silk to different branches to support the cocoon, and keep it in a proper poise. If, by any means, any of these supports are broken, the worm finds his arrangements deranged, and, becoming at once discouraged, abandons his cocoon, and throws out his silk at random, wherever he goes. Such accidents sometimes occur, by worms working in the same neighborhood crossing each other, though this is not often the case.

It sometimes occurs that worms, apparently as good as any, linger on the shelves and refuse to mount, the reason of which seems not understood. Such worms, however, will generally go to work and spin vigorously, if placed in a good position, and become quite lively when exposed to a moderate increase of heat, which it is always advisable to have the means of producing.

The spinning worms should be visited with great care and frequency, that no diseased worm be allowed to remain among the healthy ones, to become putrid, and vitiate the atmosphere, which should, above all things, be pure and well supplied with a free circulation of air.

Much care is required that no worms be placed in the cabins until they are thoroughly ripe, which is easily determined by those

accustomed to them, as they will refuse eating, commence crawling, and assume a transparent appearance, resembling a newly-laid egg. This is peculiarly the appearance of the head and neck.

We must here terminate our views of Chinese silk culture. What has been said has been culled from much matter on the various topics introduced. To include the translation wholly, would have been impracticable; and to extract the sense of such a mass of confused indefinite scrapings has been intolerably tedious.

The management of the mulberry tree by the Chinese; their application of artificial heat; and the use of heat at the time of spinning, are subjects deserving our particular consideration.

Further than this, we have no remark to offer, either in commendation or otherwise, of Chinese practices in making silk. Our readers must judge of their value. What may be entirely practicable under their system of labor, may be wholly incompatible with ours. There will be found suggestions without doubt, which may be turned to good account by American silk producers. We commend the whole to an attentive reading.

The history of the silk culture in the United States—which is but the continuation of a series of efforts to establish it in England—commenced long before the discovery of this continent by Columbus. It is appropriate, therefore, to preface what we have to say under this head, by an allusion to the introduction of the silk trade into England, and their repeated attempts to make cocoons.

No sooner had the elegance of silk, as an article of apparel, begun to attract attention, than the whole energy of the government was bent upon the introduction of its manufacture as a new industry for their own people; and if any one feature of British legislation has been more prominent than others, it has been the incomparable perseverance with which they have fostered and perfected their own manufactures.

Their example in this respect is worthy the imitation of all other governments, and, *above* all, of our own. To this spirit, more than all other causes combined, are they indebted for the present extent and perfection of their manufactures. In nothing has this been more marked than in reference to *silk*. As early as 1180, during the reign of Henry II., the beauty of silk began to be admired and coveted.

We are informed that, at the marriage celebration of Margaret, daughter of Henry III., with Alexander III., of Scotland, no less than 1,000 English knights were apparelled in cointises of precious silk.

The first example of the restrictive policy

of Great Britain, was an act, in 1363, to encourage the manufacture of silk. This act restricted manufacturers, merchants, &c., to the making and dealing in one particular kind of goods, with an exception in favor of females engaged in the manufacture of silk.

In 1454, an act was passed, prohibiting for five years the importation of every article of silk which they were capable of making themselves. In 1463, this statute was extended to several other articles, such as laces, ribbons, fringes, silk twined, silk embroidered, tires, purses, &c. In 1482, the encouragement afforded by this act was withdrawn, and the consequence was, the manufacturers were at once thrown out of employment and reduced to want.

So disastrous was the effect of this repeal that it was speedily renewed, to continue for four years.

The business thus protected, progressed rapidly; and in 1508, under Henry VII., an act was passed prohibiting every article of silk wrought either alone, or with other stuffs, which their own people could make. The violation of this law was forfeiture.

In the reign of James I., silk throwsters and dyers were introduced, and broad weavers imported from the continent.

In 1629, the business was so far advanced, as to be considered of *national value*, and entitled to an act of incorporation, which was passed under the name of "The Masters, Wardens, Assistants, and Commonalty of Silk Throwsters!" Continued advances were made, but the machinery employed was very imperfect, and they were mainly dependent upon Italian throwsters for organized and other fine silks, up to the year 1718, when a young and enterprising artisan, Mr. John Lombe, of Derby, undertook an enterprise, at great hazard, by which he hoped to gain a knowledge of the silk throwsting machinery of Piedmont.

Dr. Lardner has the following account of this adventure of young Lombe.

"There were three brothers, Thomas, Henry, and John; the first was one of the sheriffs of London, at the accession of George II., on which occasion he was knighted.

"About this time the Italians had introduced great improvements in the art of throwing silk, and rendered it impossible for the Lombes, who were engaged in the silk-throwing business in London to bring their goods into the market upon anything like terms of equality with the Italians. The younger brother was a lad at that time. By the laws of the Italians, it was made death for any one to discover anything connected with the silk manufacture; with this addition, the forfeiture of his goods, and his person and name to be painted outside the prison

walls, hanging to the gallows by one foot, with an inscription to remain as an indelible mark of infamy.

"Young Lombe, however, was not deterred. On his arrival, and before he became known, he went, accompanied by a friend, to see the silk works. No person was admitted except when the machinery was in action, and even then he was hurried through the rooms with the most jealous caution. The celerity of the machinery rendered it impossible for Mr. Lombe to comprehend all the dependencies and first springs of so extensive and complicated a work. He went with various persons in various habits, as a gentleman, a priest, or a lady, and he was very generous with his money; but he could never find an opportunity of seeing the machinery put in motion, or of giving to it that careful attention which was his object. Despairing of obtaining adequate information from such cursory inspection, he bethought himself of associating with some clergymen; and being a man of letters, he succeeded in ingratiating himself with the priest who confessed the family to which the works belonged. He seems to have opened his plans, partly, at least, to this person, and it is certain he found means to obtain his co-operation. According to the scheme adopted, Mr. Lombe disguised himself as a poor youth in want of employment. The priest then introduced him to the directors of the work, and gave him a good character for honesty and diligence, and described him as injured to hardships. He accordingly engaged as a filature boy, to superintend a spinning engine.

"His mean appearance procured him accommodation in the place which his design made most acceptable to him.

"While others slept, he was awake, and diligently employed in his arduous and dangerous undertaking. He had possessed himself of a dark lantern, tinder-box, wax candles, and a case of mathematical instruments. In the daytime, these were secreted in a hole under the stairs where he used to sleep. He then went on making drawings of every part of this grand and useful machinery. The priest often inquired after his boy, and through his agency, Lombe conveyed his drawings to Messrs. Glover & Unwins, at Leghorn, the correspondents of the Lombes, who made models from them, which were dispatched to England in bales of silk.

"After Lombe had completed his design, he remained at the mill until some English ship should be on the point of sailing for England. When this happened, he left the works and hastened on board.

"Meanwhile, his absence had occasioned suspicion, and an Italian brig was dispatch-

ed in pursuit ; but the English vessel happily proved the better sailer of the two, and he escaped. It was said that the priest was put to the torture ; but another account states that after Mr. Lombe's return to England, an Italian priest was much in his company, and it is the opinion that this was the priest in question.

"The common account of Mr. Lombe's death is, that the Italians, exasperated at the injury done their trade, sent over to England an artful woman, who associated with Mr. Lombe's Italian servants engaged in his works, and having gained over one, poison was administered, of which, it is said, Mr. Lombe died on the premises, on the 16th November, 1722, in the twenty-ninth year of his age."

On his return to England, he obtained a patent, securing to him the right to use and dispose of the same for fourteen years.

The first machine constructed from his drawings was of immense capacity, and when completed, was capable of turning out 318,504,960 yards of organzine daily.

The building erected for this machinery was five stories high, and 660 feet in length. So much time was consumed in erecting the building and completing the machinery, that Mr. Lombe applied for an extension of his patent ; which, however, was refused, on account of its great public utility, but at the same time Parliament voted him the sum of £14,000, in consideration of his eminent services.

From this time the business moved steadily forward, continually increasing in interest as it advanced to perfection.

In the year 1783, their manufactures of silk were valued at £3,350,000.

From evidence placed before Parliament in 1821, we collect the following statistics :—

There had been imported, for several years, from Bengal, China, Italy, and Turkey, an average of at least 1,800,000 pounds of raw silk, under a heavy duty ; and subsequently to this, for eight years, the importation of raw and thrown silk amounted to nearly three and a half millions of pounds annually.

The number of looms employed exceeded 40,000, giving employment to a vast number of operatives, whose aggregate wages, at reduced rates, exceeded £3,000,000.

It was then calculated that nearly half a million of people, directly or indirectly, derived their maintenance from the labor created by this manufacture. The amount actually paid to persons employed in the various branches of the business, was set down at £10,000,000.

In 1825, there were 226 throwsting mills, running 1,180,000 spindles. At Spitalfield alone, there were 17,000 looms in operation.

Since the above facts were elicited, there has been an uninterrupted increase in every department of the business, and it has continued to be the subject of constant Parliamentary watchfulness and guardianship. Every exigency has been provided for. Statutes have been made, modified or repealed, to correspond with its interests ; and what is the result ? Just what it would be here, or in any other country where a like policy is pursued. The *perfection and beauty* of English silks are the *admiration and envy* of the world. Under such a "*selfish system*," manufactures must flourish ; without it, neither silk nor anything else can thrive.

These things have their infancy, and need years of constant vigilance before strength enough can be acquired to withstand the competition of older countries, and maintain an independent existence.

As early as 1608, the question of producing a supply of raw silk from their own soil, appears to have occupied the attention of Great Britain. It had then recently been introduced into France, to the great profit of that nation ; and king James I., who was then on the throne, saw no reason why his own people might not prosecute the industry with similar success and advantage.

His recommendations met with the approval of the inhabitants ; and in 1620, there were a large number of mulberry plantations in a flourishing condition ; but the humidity of their climate opposed every attempt to naturalize the worm, and the whole matter has long since been abandoned.

These failures at home induced King James to turn his attention to his colonies in America. Accordingly, trees and eggs were forwarded, and competent instructors sent from Europe to Virginia, where the first effort was made.

A waiter in 1609 says : "There are silke wormes and plenty of mulberie trees, whereby ladies, gentlewomen, and little children, (being set in the way to do it,) may be all imploied with pleasure, making silke comparable to that of Persia, Turkey, or any other." No doubt was then entertained of the practicability of silk culture in Virginia. So important was it considered, that measures were resorted to, to compel the colonists to commence the business. A penalty of ten pounds of tobacco was imposed on every planter who should fail to plant ten mulberry trees upon every hundred acres of land in his possession. The same act gave a premium of four thousand pounds as an inducement to commence the business ; and in the succeeding year, ten thousand pounds of tobacco were to be awarded to the person who should export the raw silk, amounting to £200 in value.

The cultivation of tobacco, however, obtained the preference, and little progress

seems to have been made in silk, though it was continued for many years, to some extent, and it is stated that the coronation robe of Charles II., in 1660, was made of Virginia silk.

By far the most important and successful attempt made under the patronage of Great Britain, was in Georgia. The climate was every way congenial and the colonists were anxious for the undertaking. So elated were they with the idea, that they actually dreamed of supplying all Europe from that single colony.

The substantial facts connected with the Georgia experiments are all that we can give. The most full and authentic account which has been published is found in Harris's *Memoirs of Oglethorpe*. The first inducement offered to the settlers of Georgia to encourage the production of silk, was the appropriation of government lands for the supply of the best mulberry trees—and additional grants to those who should plant a certain number of trees. This bounty was offered for ten years.

So intent were the authorities upon having the silk industry uppermost in the minds of the people, that the public seal had on one side of it a representation of silkworms, with the words, "*Non sibi, sed aliis*," "not for ourselves but for others." The colonial trustees introduced silkworm eggs, trees and seeds liberally. In 1732 they engaged a professed silk-reeler from Piedmont, M. Amatis, who, with several Italian reelers whom he brought with him, commenced reeling some very fine cocoons raised at the trustees' garden, which gave silk equaling in beauty the best of French or Italian production. They were soon, however, interrupted by a difficulty among their reelers, who treacherously destroyed the machinery, trees and eggs, and then fled to Carolina.

The trustees had become too well satisfied of their abilities to make silk, to abandon their work here. Mr. Camuse and his wife, Italians, with their two children, and two other persons, were engaged for six years to take charge of a *filature* at a salary of £520 per annum, besides a dwelling-house and garden.

The first silk produced in Georgia (eight pounds) was carried to England by General Oglethorpe, in 1734. Another shipment was made the following year, and the silk manufactured into organzine by Sir Thomas Lombe, who was so delighted with its quality and beauty, that he immediately exhibited it to Queen Caroline, who was equally pleased, and directed that it should be woven into a dress pattern for her majesty's wearing. At its completion it was appropriately presented by Mr. Booth, the weaver, accompanied by General Oglethorpe and Sir Thomas Lombe. At the next birth-day of the king, Queen Caroline appeared at the levee in a full court

dress of Georgia silk. Governor Oglethorpe returned to America greatly encouraged, and adopted immediate means for a more vigorous prosecution of the business. A number of persons were sent to the filature for instructions in reeling, and a large amount of eggs preserved for the ensuing season. In March, 1736, the governor, through the Rev. Mr. Bolzius, presented one mulberry tree to every inhabitant.

The Saltburgers, at Ebenezer, entered fully into the views of Oglethorpe, and were forward in carrying out his suggestions, and the result shows remarkable success. The influence of Mr. Bolzius, though he confessed himself disinterested, was decidedly favorable, and he did much to induce the families of his parish to co-operate with the trustees. The indifference of this excellent man soon disappeared, for in 1742, we find him one of the most zealous advocates for silk culture in Georgia. Two reels were erected near his house, and the reeling of cocoons commenced with gratifying success.

Mr. Camuse saw this, and through envy, withheld the most essential knowledge from the women sent to him from Ebenezer for instruction in reeling. The Germans proceeded with unabating activity, increasing their stock of trees every year. In 1749, the trustees offered a liberal bounty to every woman who should make herself mistress of reeling during the year; and at the same time gave Mr. Bolzius permission to erect sheds for reeling, which was done, and suitable machines provided. Fourteen young women claimed the bounty offered, and engaged in reeling at the filature the next season. Over one thousand pounds of cocoons were raised, and the silk reeled in so superior a manner as to command a higher price in London than that from any other country.

The growth of the mulberry at Ebenezer must have been remarkable; for we see it stated that trees planted in front of the parsonage, at ten years of age, measured nearly four feet in circumference. Judge Meigs remarked not long since, when conversing on this subject, that, in passing through Ebenezer about forty years ago, his attention was attracted by the uncommon luxuriance of the mulberry trees. At the request of the passengers the coach was stopped to allow them to collect some of the fruit of these trees, which was then ripe. The judge says, "the berries were as large as my thumb and very fine." Many of the trees planted by the Saltburgers, more than fifty years before, were then standing apparently in their prime.

Mr. Pickering Robinson, and James Habersham, in August, 1750, were appointed "commissioners to promote more effectually the silk culture." Mr. Robinson arrived at Savannah in the following December. The first act of the commissioners was the erection of a public filature which should serve as a normal school for the whole province, from which

to send on competent persons to manage private filatures, which it was supposed would soon follow as necessary to complete success.

A large building for this purpose was undertaken in March, 1751, and on the 8th of the May following was in complete operation.

Six thousand three hundred pounds of cocoons were sent to the filature this year, of which two thousand came from Ebenezer, and the remainder from Whitfield's orphan house.

Mr. Robinson devoted himself arduously to the duties of his appointment, proving very satisfactorily to the trustees that the time he had spent in the filatures of France, whither they had sent him, had been well improved in learning "the mysteries of silk winding." Mr. Robinson's engagement with the trustees was for a single year, but he was retained a second year by the local authorities at the earnest solicitation of his associate, Mr. Habersham, who thus speaks of him: "I think him the most prudent, as well as the most capable person, I ever knew, to undertake such a work, and if he could be continued here, I doubt not, that he would turn out a number of well-instructed reelers, who would be able to conduct filatures at Ebenezer, Augusta, and other parts of the province." Mr. Robinson was appointed an assistant in the government, and strongly urged to remain, which he refused to do unless permanent encouragement were extended to the culture of silk, for at least fourteen years. He returned to England in 1752, when his place was supplied by Joseph Ortobughe—a native of Piedmont, and an accomplished reeler. Certificates of the excellent quality of their silk continued to reach them every year. The filature at Savannah was destroyed by fire on the 4th of July, 1758, with several thousand pounds of cocoons, and much of the machinery. During the four years preceding this, more than 21,000 pounds of cocoons had been received.

A larger and better building was immediately erected, and ready for use early the ensuing spring. This house, when no longer employed as a filature, was used as an assembly, or ball-room, and also for public and religious meetings, and later, as a dwelling-house, until March 25th, 1839, when it was destroyed by fire.

Within eight years from this time little less than one hundred thousand pounds of cocoons were received at the filature, a very large proportion of which came from the Saltburgers at Ebenezer.

Unfortunately, at the very time when public confidence was fixing in favor of silk, and when the continuance of the encouragements which had been given for a few years preceding, bid fair to constitute it a staple; changes were made in the prices paid for cocoons, old bounties withdrawn and new ones enacted—until a general uncertainty and stag-

nation ensued. Even at Ebenezer the business was at a standstill for some time, and required uncommon exertions to revive it; but under the administrations of Mr. Wertsch, a patriotic magistrate, the German people were again induced to give it their attention, which they continued to do for several years, sending annually to England several hundred pounds of the raw material. The next interruption was that of the Revolution; since which it has never been revived to any profitable account.

The last silk offered for sale at Savannah, was a lot of 200 pounds in 1790,

The impression left upon the public mind was altogether favorable.

A public filature for a while existed at Philadelphia, the property of a company organized for the purpose of promoting silk culture.

This was established about 1770, and a large quantity of cocoons was soon received from the surrounding country.

Dr. Franklin took an active part in this enterprise. This establishment was never opened after the war.

The only other place where any very decided action was taken previous to the war, was at Mansfield, Ct., where the business in its several branches has been continued until within a few years.

The production of cocoons has ceased from neglect to keep up a supply of good mulberry trees. Much sewing silk is still made there.

The business at Mansfield has proved very profitable, for at a time when most of the surrounding towns were insolvent, it was unembarrassed—with money in its treasury.

No man in Connecticut manifested so much active interest in this cause as President Stiles, of Yale College. His experiments began in 1758, by the planting of three white mulberry trees, which he very appropriately named A, B, C. These trees in the course of four or five years became very fine, and commenced bearing fruit. Every berry was carefully collected by the Dr.'s own hands, and the seeds preserved as a legacy for coming generations.

In 1765, this alphabetical nursery had extended to K, of fine growing trees, and a considerable number of worms had been fed. As soon as a sufficiency of seeds had been produced, the Dr. took a journey through the country, and distributed them to many; exacting great care in their treatment, and the return of a certain proportion of trees to him when they had attained a proper age for transplanting.

This nursery at Yale College was emphatically the "A, B, C," of silk culture in New-England.

President Stiles continued his experiments with unabated interest for nearly forty years, and there is now in the library of Yale College a manuscript copy of a work on silk written by him, embracing a vast amount of

practical information, the results of his experience.

"It is exactly in the state in which the worthy Doctor left it, bound with the very string which his own hands had tied, and surrounded by all the veneration with which respect for the honored dead can invest it."

It has seldom been handled by any except his venerable cotemporary and particular friend, Dr. Daniel Stebbins, who is still living, at an advanced age, in the village of Northampton, Mass. It will be seen, by a communication from his pen, in another place, that Dr. S. still retains his first love of the silk cause, and is doing much for its advancement. He has probably the best nursery of mulberry trees in the United States.

The writer has enjoyed many personal interviews with the Doctor on this subject, and has now in his letter-case from him more than sixty closely-written communications of much value.

Since the close of the war, no systematic efforts have been made to establish the silk industry amongst us; yet there has not been a single year in which good silk, to some extent, has not been produced, and in some states in considerable amounts.

The most remarkable period in the whole history of silk in this country commenced about 1830, at the introduction of the *Morus Multicaulus*.

An intense excitement pervaded the whole country, in which all classes were concerned. A few thousand buds of this tree were considered a fortune, and for awhile almost became a substitute for money.

Large companies were formed, books written by men without experience, mulberry orchards planted, coconeries and factories erected, and the newspapers of the day filled with the prices current, and the record of transactions in mulberry stock.

This period was of brief duration, and was followed by a reaction which carried everything before it, and left the very name of mulberry and silk the object of general contempt.

The particulars of this excitement are too fresh in the memory of all to call for a further recital here.

On the whole, the *multicaulus mania*, as it is termed, was not without its benefits. It was the means of introducing mulberry trees rapidly throughout the states, many of which fell into good hands, and are returning an ample reward for the labor bestowed upon them. It is true, prejudices were created which still fetter the silk cause, but these must inevitably submit to the irresistible influences of successful experiments which are making throughout the country. An amount of sober reasoning is certainly turning public attention to this subject, which, regulated by the experience of the past, and the information we are acquiring from the silk-producing countries of the Old World, *must and will fix*

it as a distinguishing staple of American industry.

The following communications will show that I am not alone in this opinion.

These letters have been written in reply to circulars issued early the last summer, calling for practical information on the subject, whether favorable or otherwise.

A large number of responses have been made, the most important of which only are included in this publication. They will be accompanied by such remarks as their contents may suggest.

The first we shall give is from Dr. Stebbins. The great age of the author, being now more than 80 years old, will attach increased interest to his communication and credence to his suggestions. The Doctor has been one of the most active men of his day in all the leading enterprises of the age, and is perhaps one of the most eminent living illustrations of a life of temperance and industry.

His mental health and the steadiness of his nerve far surpass those of most persons of the present generation of half his years.

A. C. VAN EPPS, Esq.

Dear Sir:—Having had the privilege of President Stiles' Silk Journal several years, in November, 1843, I prepared a supplement and returned it to Yale College, to the care of President Day, in testimony of my approbation and high estimation of the Journal—of its excellency, truthfulness, and accuracy, as applicable to the present day—and its evidence in favor of only *one early crop and open feeding* in New-England, instead of a succession of crops in *our climate*, attended with sickly worms and inferior cocoons. The Silk Journal is a valuable document, in favor of the practicability and utility of silk culture in America. This, with the recent publication in New-York, by Greeley & McElrath, compiled from the most approved and reliable sources, or Treatises on Silk Culture, with the report of the New-England Silk Convention at Northampton, and the report of the American Institute, "*The Silk Question Settled*"—these, with other appliances, we hoped, might elevate the silk cause beyond the reach of calumny.

Every part of the Silk Journal strengthens and confirms the position now approved by silk-growers. There has, however, been an improvement in the variety of mulberries, mode of feeding—by use of Gill's cradles—the application of the after-foliage for making paper, using the inner bark of the annual sprouts for clothing, cordage, &c., and the perforated cocoons for spinning thread, knitting hosiery, gloves, and making durable clothing; and now, in 1847, using the expressed juice of the fruit to make *mulberry writing fluid*; all of which having been tested, can we doubt of ultimate success? We need not trench upon the ordinary pursuits of the farmer, mechanic, merchant, or man of science. Silk culture, with the due protection of our general and state governments, may become of great national importance and remunerating to individual enterprise.

We annually import of raw and manufactured silks, nearly *twenty millions* worth, and two or six millions worth of rags and junk for paper; which is, in fact, encouraging the enterprise and support of foreign population, while we have the facility and ability to produce both. Such are our national habits of *industry, enterprise, and mechanical tact*, that we may venture to compete with the cheap labor and cheap living of any portion of the world, for we are *freemen*, enjoying the fruits of our industry.

What has been done in the culture and manufac-

ture of wool and cotton, we may hope to approximate in the culture of silk, by the application of the same untiring industry and perseverance. "Nil est desperandum," should be the motto of silk growers.

With regard to the origin and high antiquity of silk, President Stiles advances an opinion from the Seventy of Genesis, Leviticus, Psalms, Proverbs, Ezekiel, &c. It has been said that lexicographers are of opinion that the Hebrew words *shesh* and *meshi*, and perhaps other Hebrew words, might be rendered silk, cotton, or fine linen, and is sometimes rendered silk, Ezekiel, xvi. 10; "clothed thee with silk," Genesis, 41, 42.

In Egypt silk was known, and Joseph was probably clothed with silk. In the time of Solomon, too, (Prov. xxxi. 22,) "her clothing, silk and purple."

That the mulberry tree was known in Palestine, appears from 2d Samuel, 1st Chronicles, and the Psalms. The valley of Baca, too, may have been so called from the abundance of mulberries, the only tree adapted to make good silk, and is probably indigenous to all climates where silk can be made.

It is believed that the silkworm has been sustained and preserved in open weather from time immemorial, until domesticated by the officiousness of mankind. The silkworm has been exposed to all the vicissitudes of the seasons, summer and winter, so as to crop its food and wind the cocoons upon its favorite tree in the open air, probably from year to year, preserve its species, independent of exposure to devouring insects, vermin, and birds of the forest. This is corroborated by the testimony of living witnesses, also by written testimony. They have been seen on trees in South Carolina, on Mt. Holyoke, in Massachusetts, and in the State of Maine. These facts show that a *remnant* may be preserved and propagated, pass through all the stages of mutation, from the egg to the cocoon, in the open air, from year to year, and perhaps for centuries.

Respecting the most approved kind of mulberries for feeding, and the management, experience has proved that the *Canton*, *Asiatic*, *Broosa* and *Alpine*, should be headed down every spring, to augment the number of the stalks, the size and number of the leaf, as in China; and if as many pounds of bark silk may be taken from the stalks of an *acre* of close-set mulberries as of flax, the culture of the mulberry for the bark silk, of itself, might be a profitable investment.

Quere.—Whether the mulberry tree, its seed, the knowledge of silk culture, originated in Palestine, Egypt, or Babylon, and thence found its way to China, in consequence of wars, removal of captives, dispersion, emigration or captivity of the Jews, Egyptians or Babylonians, or whether it originated in China, and thence passed into Europe, is an inquiry, of use only as evidence of its great antiquity. There is, however, a strong probability that silk was known in Palestine even before China became a nation, their fabulous history to the contrary notwithstanding; and the tradition of the stealthy introduction of silkworms' eggs from China into Italy or Greece, is problematical.

At an early period of settling the American continent by Europeans, the culture of silk was fostered, and with great expense introduced into Georgia, and thence gradually into the middle and eastern states, by the united exertions of President Stiles and Dr. Aspinwall, permanently established in New-England, especially in Mansfield, Ct., and in Northampton, and continued to this time, 1847.

The culture of silk was attended with reasonable success and profit up to the Revolution, and even during the war progressed slowly, yet surely; so that in the year 1839, it was estimated that Mansfield and vicinity raised *five tons* of raw silk, worth about \$500,000.

The white mulberry has been in use until about 1830, when other varieties were introduced, having a larger leaf, and equally adapted to the nourishment of the silkworm and production of silk. Since the introduction of these varieties, there has been a gradual advance in growing silk, until intercepted by the mulberry speculation, so called.

Dr. Parker, of Canton, China, with a native China-

man, having visited the writer, were shown the Canton foliage, which they recognized as the genuine kind used in China. Dr. Parker was pleased to see so large a leaf, and suggested that our climate was more congenial than even China, to develop so fine a leaf. But being shown a multicaulus leaf, the Chinaman, rapidly passing his fan over the leaf, exclaimed, "*too much big*." During the tree speculation, so called, there was as much fancy about the kind and value of different kinds of trees, as of any fancy goods of the stores and shops.

There was one multicaulus tree from the south, purchased and set out in Northampton, which cost fourteen dollars, and lived two or three years. Young trees here of one season's growth sold usually from twenty-five cents to two dollars, and called cheap. During the tree speculation, there was a tree, the product of white mulberry seed, which developed a larger leaf than usual. Being transplanted from the nursery to a barn-yard near a public road, in Belchertown, it attracted the attention of a mulberry speculator, who gave the owner twenty-five dollars for the tree; removed it into Connecticut, and resold it for fifty dollars, to a man by the name of Sharp, and called the Sharp tree, who esteemed it so valuable that *one dollar per bud* was the price, and declined the offer of four hundred and fifty dollars for one-fourth of the tree, as stock property; but soon the tree lost its value, and was worth no more than an ordinary white mulberry.

During the mulberry excitement, some made, but more lost money. Those who speculated on borrowed capital, depending on sales of mulberries, were induced to offer them at under prices. Those in similar situations adopted a similar course, underselling each other; convinced the public that trees were of little value, and finally ruined the business; identifying the mulberry bubble as one and the same with the real silk cause.

There were a few instances where money was made in the mulberry deal. An individual of my acquaintance, who had indorsed for his friend that failed, having a patch of Canton mulberries, from less than one-fourth of an acre sold enough to lift a mortgage and note, the principal and interest of which would have exceeded ten thousand dollars.

But unpropitious as the silk business may have been a few years past, the prospect, in 1847, is now brightening, and to meet the necessity of the case, trees must be multiplied to a great extent, but not in hot-houses, as was done in the mulberry speculation; such forced plants, or even those raised in very warm climates, produce a sickly plant for New-England. People were ready to take trees as fast as they could be raised, and no wonder that some were crazed, without considering that silk might be raised like other crops, and with as much certainty; that the transportation of a pound of raw silk, worth five dollars, costs no more than a pound of flax or hemp; hence the advantage of silk over most other crops.

If two-thirds of the exports of Italy consist of raw and manufactured silks, and that in France silks are among the most productive sources of revenue, why may not the United States profit by the same course? Our habits of industry, perseverance, and mechanical tact, are in our favor. Our soil and climate are propitious, and why should we despair of being able to compete with any other people or nation in the culture of silk?

We have hundreds of miles of inland over which the wind passes to divest it of superfluous moisture, rendering the air pure and congenial to the health of worms. In Europe, the loss of silkworms is estimated at about fifty per cent.; but President Stiles estimated the loss in America at only twenty-five or thirty, under the then mode of feeding; but with the present improvements, need not exceed five or ten per cent., some say less.

That pure air and ample ventilation are essential to the delicate silkworm, has been proved by casting away sickly worms; and, exposing them to the open weather and drenching rains, they have so recovered as to make fine cocoons.

Our early crops are generally more healthy, and

make firmer cocoons, than those from a late crop. Gill's cradles are of great advantage to the silk grower. These, with other improvements of the present day, may be a saving of fifty per cent. to the silk grower. In New-England, we may have early frost to injure the foliage: there is a remedy. By saving and drying foliage, pulverizing, moistening and sprinkling with wheat or rice flour, the worms will feed as readily as on green foliage.

Silkworms' eggs may be preserved, during winter, in any cool, dry place. The ice-house may be too moist, unless the eggs be inclosed in dry boxes.

Among all the varieties of eggs, the peanut is the best, having less floss and greater length of fibre.

It is humiliating and wholly unnecessary for us to contribute so much annually for the article of silk, which is an indirect way to support the population of other countries. If we must support foreigners, why not do it for those who are flocking to our shores to engage in agricultural pursuits in the far west? Let us interest them in the culture of silk. They may be so far from cash markets, that the expenses might render ordinary crops of little value.

The object of the foregoing is to preserve a record of the former and present condition of silk culture in America, and something of what has been done since the days of President Stiles, who, with Dr. Aspinwall and Joseph Clarke, may be considered the pioneers of silk culture in the northern and eastern states, and now revised and corrected for the year 1847.

Little did I think, while a member of Yale College, under the presidency of the Rev. Ezra Stiles, D.D., that when approaching him, by the distant manners of that day, with hat under the arm, and doing obeisance to his person, enveloped in his brown American silk toga, that I should ever follow him so closely in his favorite amusement of silk culture.

It is sincerely hoped that some friend should write out and deposit records of the state of silk culture with the President of Yale College, for the time being, at least every twenty or twenty-five years, and especially at the end of the present century, to be preserved in the archives of the college, where is the Journal of President Stiles, the nucleus of American silk culture; the reports of the state of silk culture in America may be kept *in perpetuum*. The sequel of silk culture in the United States may be very important to the country, and to carry out the object of the subscriber in all coming time.

DANIEL STEBBINS.

NORTHAMPTON, September, 1847.

Remarks.—What is here said of "heading down" mulberry trees needs notice. The advantages apply equally to other varieties also. For this purpose, the trees are planted in rows, about five feet apart, and about two feet apart in the rows, which should always run north and south, to expose equally to the sun. The cultivation should be principally by means of a hoe, or if a plow is used at all, it should be a very light one, (a narrow cultivator is good,) and in the middle, between the rows. Preparatory to a plantation, the ground should be clean and mellow by deep and repeated plowing, and well supplied with vegetable manure. The plants then take deep root and are easily cultivated. The late foliage generally will keep the soil in good condition, and is probably the best fertilizer that can be employed for this purpose.

We have preferred to remove the sprouts late in the fall, after the foliage has fallen,

and preserve them, either for planting in layers the following season, or composing for manure.

It is now probable that, by a recent discovery for separating the fibre of hemp and flax, the firmer bark of the mulberry may be obtained, which will render the after-growth of great value.

The leaves should be carefully drawn up on the roots of the trees before winter sets in. The sprouts start very early in the spring, furnishing tender leaves for young worms, and, by the time of the fourth moulting, are sufficiently matured for cutting down for branch feeding, which is the practice now by the most successful feeders. A few inches should always be removed from the tops, as the leaves there are too watery for advanced worms.

As regards the use of mulberry leaves for paper, we doubt whether for fine paper it can be bleached sufficiently white.

It makes a very strong paper for wrapping, and is valuable as a place of deposit for silkworms' eggs.

"The size of the cradle must depend upon the form and extent of the building. To suit a shed or building fifteen feet wide, the cradle should be twelve feet long, and have three rockers four feet long, made of plank fifteen to eighteen inches wide, and about one and a half thick. A trough, made of boards, joined at the bottom, and spreading one foot at the upper edges, with one end open, is to be fitted into notches in the centre of each rocker; this forms the bottom of the cradle. From the end of each rocker, a post two and a half feet long extends upwards, inclined a little outwardly. A narrow strip of board runs along the ends of these posts, to which, and to the upper edge of the trough sides, laths are fastened half an inch apart, on which the branches, cut up in pieces about one foot long, are laid.

"Feeding in the cradles commences when the worms are about half grown, or immediately after their last moulting; where they remain until they spin.

"Care should be taken not to give at once more leaves than the worms will eat up while fresh, as, otherwise, a surplus is left to dry up, litter the trough, and obstruct ventilation.

"The cradle should be gently rocked at each feeding, thereby removing all impure air from about the worms and branches, and shaking down the dry leaves and excrement into the trough, which is washed out by occasionally pouring in water at the open end. The motion of rocking is very agreeable to the worms, being similar to that of the branches, when feeding in a state of nature.

"Another advantage is, that no worms can fall through the trough to the ground; those that happen to fall in the brush, crawl to the sides and ascend to the top at pleasure.

"The worms readily spin among the branches, making but little floss, and seldom double cocoons. By fenders on the rockers, mice, rats, &c., can be prevented from injuring the worms. The sheds and cradles are cheap, easily constructed, and meet all the wants of the worms, which are, protection from the storms, birds, &c., pure air, cleanliness, regular feeding with fresh nutritious leaves, and to be undisturbed by handling, and to spin their cocoons when ready.

"They curtail the expenses more than one-half, and double the quantity of silk from a given quantity of worms, over any other mode heretofore practised."—*Gill's Circular*.

Remarks.—The advantages claimed by Mr. Gill for his cradle at first strike the reader as too great to be fully realized; but the inventor assures us, as do others who have them in use, that the picture is not overdrawn. Our own experience, too, in the use of them, confirms the statement as far as the principle is concerned. We think, however, that a cradle with higher rockers, say two feet, without a trough, and the bottom one half wider, would secure all the *advantages*, and avoid some objections. It is rather inconvenient cleaning the trough; and even when this is done, it remains damp, with litter sticking to it, which soon moulds, and causes an offensive effluvia. Besides, with the greatest care, the bottom sometimes becomes clogged with litter and excremental matter.

These objections occurred to us on first seeing the cradle; and though our experience in the use of them has been limited, it has not served to lessen them much.

We must attribute this, in part, to want of care, as Mr. Gill assures us that, when properly managed, no such objections exist.

Individuals are authorized to use them throughout the term of the patent, as they please, for \$10.

The next paper we shall publish is from the pen of the Hon. Joel R. Poinsett, whose familiarity with silk production in Europe, and enlightened and practical views of the industry and economy of our own country, entitle it to candid consideration.

THE HOMESTEAD, GREENVILLE, S. C.

Dear Sir.—I have received your letter of the 4th instant, asking me to give you my views and impressions whether favorable or not, in relation to the culture of silk in the southern portion of the United States, and at the same time asking of me such suggestions of a practical nature as my acquaintance with other silk-growing countries, and what I have noticed here, may enable me to offer.

If I did not think favorably of your efforts to recommend the culture to the people of the South, I should not have ventured to oppose my opinions to those of a person, who, like yourself, has been long occupied with this important subject. But thoroughly persuaded of its *practicability and importance*, I cannot refuse my feeble aid to urge on the introduction of a new staple likely to prove so advantageous to our country.

You are aware that this matter has frequently occupied the serious attention of Congress, and that there exists several luminous reports on the subject of raising the silkworms and reeling and throwing the silk. I have not access to these reports at this time, nor have I here a paper published by Mons. D. Homerque at Philadelphia, under the patronage of our distinguished fellow-citizen, Wm. Duponceau. They contain the most ample instructions in relation to rearing the silkworm and reeling the silk, and if these efforts have hitherto produced so little effect, it is to be in some measure imputed to the peculiar character of our people. We of the South are neither *patient nor persevering*, and can seldom be brought to undertake any enterprise which it requires more than a season to accomplish. As it requires 152 lbs. of mulberry leaves to make one pound of reeled silk, the trees must be cultivated on an extensive scale before any considerable establishment can be formed, so that hitherto silkworms have been reared, and silk spun more as an amusement than

an occupation; and the *morus multicaulis* has been cultivated with a view rather to its *sale* than with any intention of applying its leaves to their legitimate purpose. Both the *morus alba* and the *morus multicaulis* succeed perfectly in these latitudes, and with ordinary pains the silkworm might be reared and the best silk obtained throughout a very extensive portion of our country; wherever the trial has been made on a small scale by careful hands, *I have never known it fail*; whereas, most of the large establishments intended to produce silk for exportation have failed both in England and in our Southern country.

The reasons for this in both countries are probably the same; an insufficient number of trees and want of attention to the temperature of the rooms where the worms are fed. Where the practice of rearing the worms is followed rather as an amusing occupation, than for purposes of gain, the rooms may easily be kept of a proper temperature, say 64° Fah. for hatching, and 70° to 75° while feeding, and at the time of spinning, raising the head a little everyday. It is stated in the fifth volume of the transactions of the society for the encouragement of arts, that a person had successfully reared thirty thousand silkworms, when in the beginning of July, just as they were about to spin, there came a chilly northeast wind, and many assumed the chrysalis state without making any attempt to form a protecting cover.

I have myself seen many worms destroyed by being kept in buildings constructed of thin boards, and exposed to great alternations of heat and cold.

In an account which I have seen of the silk culture in Lombardy, where nearly the entire population are engaged in it, for a stated period every year, and where the husbandmen purchase the eggs and the mulberry leaves from the large proprietor, it is said that, "in every house room is made for laying out the worms as soon as any symptoms of life appear, and that even in the poorest cottages, with but a single apartment, it is so contrived that some space is allotted for them, and the inhabitants shift as well as they can during twenty or thirty days. Tables of reed are formed about two feet and a half in breadth and ten to eighteen feet in length. These are suspended from the roof, the upper shelf two feet below it, and others at a foot distance, the lowest of them two feet from the floor. The windows are made of paper to prevent currents of cold air and too great heat; the shutters are of straw, and the door consists of a piece of old linen cloth. Within, the place is kept in darkness, except when the worms are to be fed, or the place cleaned out, when lamps are used. In many of these places thermometers, made for the express purpose, are kept to ascertain the temperature. They are made of spirits of wine, and show no other change of heat than that between the 18th and 20th degrees of Beau., equivalent to 68° and 76° of Fahrenheit, to which limits it is deemed necessary to confine their range of temperature." With these small producers, who furnish the greater quantity of silk, the labor for the most part ceases with the formation of the cocoon; for they generally sell the cocoons to other persons, who make the winding and throwing the silk a *distinct trade*. There are, however, some few establishments in which the silkworms are reared, and in which the thread is wound off and all the operations completed to fix the silk for market.

Notwithstanding a great portion of the silk prepared in that part of Italy is consumed within the country, the *exports* of this article were estimated, ten years ago, at upwards of *fifteen millions of dollars*, and it appears from late accounts that this culture has been steadily increasing ever since that period.

I have been thus particular in describing the silk culture of Lombardy, because it appears to me best adapted to this country. In the upper districts of Virginia, the Carolinas, and Georgia, there are many small farmers who might nurse the silkworm if there existed in their neighborhood *establishments for reeling and preparing the silk for market, with extensive mulberry groves and a regular supply of seed*, affording a ready market for the produce of

their labor, and an abundant supply of the raw material. These establishments for reeling and preparing the silk for the manufacturer, are the more necessary from the *skill and judgment* required to select the different kinds of silk produced by one batch of worms. We observed at Lyons that the cocoons were divided into nine distinct classes, and great care taken to reel off each class apart.

After all, it is to be feared that the culture of silk will be introduced very slowly in our country. Like that of the vine, the olive, and the cork oak, all well adapted to portions of our soil and climate, the mulberry requires time to arrive at maturity; and until our population becomes more dense and our habits more settled to a permanent residence in our birth-places, we shall continue to give a preference to the culture of such fruits of the earth as are produced by our annual labor.

Your obedient servant,
J. R. P.

Two subjects of vital concern are introduced in this communication.

The one having reference to the temperature where silkworms are feeding; and the other to *markets for cocoons and nurseries* for the supply of trees, seeds, &c. They are topics which have been repeatedly treated by us during the last five years. In regard to the former, we have given it as our opinion, that all buildings used for this purpose, should be so constructed as to place the control of the temperature entirely in the power of the superintendent. This is particularly important in all latitudes subject to sudden changes, and there are few portions of the United States where it is safe to overlook it, inasmuch as it can be done, and still admit of a construction affording the amplest ventilation.

North of the latitude of Washington, it becomes quite indispensable; south of it, it would at least be safe.

We think very favorably of the Chinese, even before described or something similar.

In saying that means for producing an artificial temperature are *indispensable*, we wish not to be understood as intimating that silk cannot be made, even in cold climates, without any such arrangement, for we have evidences of remarkable success in all the states of the North where no artificial heat has ever been introduced; and in our own feeding, large crops have been fed, with no protection from cold or light, save a simple tent with a roof of boards and sides of canvas. But in all these cases, there have been interruptions and delays, occasioned by cold nights and mornings, and chilly days during storms of rain, when facilities for retaining a temperature of 75° to 80° would have been very gratifying to our dormant families, besides materially lessening the term of labor, and securing in the end, (probably,) a fuller and better harvest.*

We have recommended, as well adapted

to the objects desired, a building of the following description:

Single story buildings, or sheds, are preferable to any others.

A convenient size for a single *home*, would be about 100 feet long by 25 feet wide. If the plantation be large, several sheds had better be put up in different parts, than to risk the health of a whole family of worms, by single buildings of large dimensions.

A cheap mode of construction would be to place square posts at six or eight feet apart, for the sides, and central posts for supporting the roof, ten to twelve feet apart. The roof may be made of boards or shingles as preferred. The sides and ends should be made in the form of Venetian blinds, of boards six or eight inches wide, and three-fourths of an inch thick. The pivots can be made to play in holes in the posts, and the whole made so as to entirely shut out both light and air, or to admit them in any quantity desired. Besides this enclosure it would be desirable, in the more northern sections of the country, to have straw mats, corresponding to the space be-

fore the facts in the case, the following answer was received.

BROOKLYN, Sept. 30th, 1847.

DEAR SIR:—Your letter, dated yesterday, has been received, and in reply I would remark, that the silkworms on which my experiments were made, were born in the last of May. During the early part of June, cold weather prevented the growth of the mulberry foliage, and they had to feed for four days on garden lettuce. This important change caused the death of many, and impaired the health of the living. On the 17th of June a full supply of good leaves were obtained.

The worms were then placed on clean hurdles and insulated by glass supports, and covered with sheets of strong twilled silk to intercept a too free circulation of air through the hurdles. They were kept in a dry room properly aired, without artificial heat, trusting to the spontaneous influence of the season.

About 1,500 healthy worms were distributed on three hurdles. One hurdle, separated from the rest, and insulated, was supplied with fresh leaves. A large electrical jar being connected with the leaves at one end by means of a metallic rod, and gradually charged from a cylindrical electrical machine, the worms were roused from their torpid state, and commenced eating voraciously. Their activity continued about an hour, when they appeared to have eaten enough. The electrical insulation was repeated at each feeding, when not prevented by a very damp state of the atmosphere, until June 28th, when many of the worms manifested a disposition to mount and spin, when they were furnished with cabins of brushwood which were soon well filled by my industrious family. They finished their cocoons fully a week sooner than those fed on the other hurdles, with a corresponding difference in the quality of their cocoons.

An electrical machine, having a ten or twelve-inch cylinder, and a Leyden jar of about three gallons capacity, and about four square feet coated surface and other accompanying apparatus, in the hands of a judicious manipulator, would be sufficient to attend upon 50,000 worms, and keep them in a healthy action. I was much pleased with the experiment, and believe it may be of consequence to silk-growers to give it their attention.

Respectfully, yours,
JESSE EVERETT.

* It has been proposed to employ electricity as a substitute for heat, and some interesting experiments have been made by a distinguished electrician of Brooklyn, to whom application having been made

tween the posts, filled on rollers like window shades, that may be lowered at any time, and would make a comfortable house in cold weather. It will readily be seen that a building, such as we have described, can scarcely be open to an objection of any kind. With the blinds slightly opened, and the ventilators in the roof raised a few inches, we have a draft of fresh air from all directions, without the annoyances of too much light or unequal currents or gusts of wind. When, too, the wind is strongly blowing from any quarter, the blinds on the exposed side may be closed.

It would be well to allow the eaves of the roof to project two or three feet to prevent water falling too near the house, and also to shield from the rays of the sun in very warm weather. Nurseries for young worms, similar to those used in China, should always be furnished in one end of the building. The east end is preferable.

Of the other subject alluded to, viz.: *establishments for purchasing and reeling the cocoons and nurseries for furnishing trees, seeds, &c.*, we have much to say, more by far, than our space will here allow: for upon *these* the success of the silk industry, in any country, is *solely and entirely dependent*. And to the fact that the attention of this country has been directed to any thing and every thing else, *rather than these*—is alone attributable the *other fact*, that, we are not at this day producing silk in amounts equal to other countries. Is not this the case? Where has the existence of a public filature, possessing any confidence, failed to secure cocoons in considerable quantities in the shortest time allowed?

Such a failure is not on record. It was so at Savannah, Philadelphia and Mansfield, and has been so in other places.

The great wonder has always been, where the cocoons came from! Otherwise, why have silk-producing nations, always sought *first*, by royal authority, to establish markets in which their people might trust, and filatures to which manufacturers might look for silk well and uniformly reeled? The reason, obviously, is the same that has induced the French nation, and this year more than ever before, to establish in every district of France, where cocoons may be produced, permanent markets and filatures supplied with well-qualified reelers.

Most of our states have given bounties, at one time and another, for the production of cocoons, but simple bounties, unless they be large enough to afford a fair compensation for the labor of producing them, will not create cocoons.

It is as unreasonable as it would be to offer bounties for raising cotton, without a single gin or mill for its manufacture.

We venture to assert here, as we have often before, that no state will raise any

considerable quantities of cocoons, with or without bounties, until *State Filatures and Nurseries are established* accessible to farmers.

And we venture another assertion: that when any state, or the states generally, shall have adopted a system supplying these defects, our people will not be slow in performing the agricultural part of this work; nor our nation *long* inferior to others in the prosecution of any part of the silk business.

To show in what light others view this subject, we include here some translations made for our use, by the Hon. Henry Meigs, Secretary of the New York Farmers' Club, and Recording Secretary of the American Institute of New York.

AMERICAN INSTITUTE, Sept. 10, 1847.

Extracts from the *Annales de la Société Sericicole*, founded in 1837, for the propagation and amelioration of the silk industry of France.

Of the Reeling, and Art of taking off Silk from Cocoons.—This brief treatise is just received from France, by the hands of Alexander Valtemare, for which the Institute, on behalf of the United States, is thankful.

Translation.—If the mulberry could be easily cultivated in the centre and north of France—if the *education* of the silkworm is sure of success, why have the efforts to establish the silk industry in these districts always failed! It is because the growers of cocoons have been unable to surmount the *difficulties in the reeling of silk*. It is because the silk they have made, being almost always *unequal* and of bad quality, could not find a market; so that too much presumption, and attempts ill managed, have ended in discouragement. Upon the reeling, then, must be concentrated *all perseverance*, all the energy of men who now-a-days determine to naturalize silk industry in the north; and it is by studying the best methods, by forming *good reelers, above all other things*, without which they never can have good silk. Under these circumstances, the want of an elementary work, capable of teaching young reelers, is imperiously felt. An old reeler of the south of France, M. Ferrier, who, for more than thirty years, has been occupied nearly sixty times every year, in the department of the Herault, and who has constantly attended to the *education* of silk worms and to reeling, in the north where he lives, has made this Manual. He attaches himself, above all things, to the positive and useful practical methods. He begins by pointing out the manner in which we ought to judge and manage the cocoons before reeling, the *suffocation* of the worms, their preservation, their transportation, their selection; nothing important is omitted, and he enters into full details. After some general considerations, he describes the different operations of reeling—the mode of beating the cocoons and

purging them—the formation of the *butt ends*—the mode of keeping the *butt ends*—the encroisure, (crossings.) Drawings are given of the various operations—a new plan, capable of supplying the wants of actual machines. He points out the quantity of silk which a reeler can furnish daily. He recommends order, neatness, and regularity in the reeling. He recommends *reeling establishments, central to the growers of cocoons*. We believe his work to be one specially conscientious.

Manual of Ferrier.—The reeling of cocoons is one of those things which theory cannot teach alone; it requires practice. However, it is impossible to give new reelers some salutary rules; and I am about to try to give them. Scientific researches are not in my plan—they are out of my reach; and we know that experiments made in a cabinet may occasion deceptions, when the same results are expected in a general and positive operation. Far be it from my thought to contest the services which science may render to industry; nevertheless, it is true, that the greater number of operators who have made discoveries, were practical men. Systems and theories may lead to error, but a judicious practice, which observes and reflects, must lead more surely to success. In a word, science should aid practice, but practice alone can decide in a sovereign manner, what is most advantageous to the manufacturer, and what will procure him the greatest benefits.

I am going to give the whole experience of my life. I never formed a system, nor do I present any discovery. I have no other object but to point out the *elements of reeling*. I shall speak of what I have done myself and have seen done. It is *in vain to raise cocoons or plant mulberries* until the art of taking the silk off the cocoons is extensively known. The silk-growing establishments in many of our provinces, especially in Touraine, which have been abandoned, would have enriched those provinces if they had possessed regular and well conducted reeling establishments!

Such, I repeat, are the principal motives which have led me to this essay. I have tried to be as clear as possible, so that I might be understood by the most inexperienced, and I shall esteem myself happy if I have succeeded. Before I treat of reeling, I shall first speak of the cocoons. What I say is founded on the experience of myself and the traditional experience of my family.

Of Cocoons.—The first attention of the reeler must be to the cocoons, because some are bad and some good, some superior and some indifferent. It is impossible to point out the way of *judging of their value exactly before the reeling, and the most experienced are sometimes deceived*. However, I may be allowed to give some precepts which may

guide the silk grower as to the qualities of the products obtained—and the reeler, as to the cocoons he should purchase. One of the first guarantees of good cocoons is the success of their education. When the worms have been well managed—when they have been sheltered from the injurious variation of temperature—when they have received frequent feed, in *equal periods, not interrupted by fasts*, when they have consumed none but *leaves free from humidity and fermentation*, and lastly, when their moulting has been simultaneous and rapid, one may count on having excellent cocoons. The essential condition of a good cocoon consists in its being *good stuff* and furnished with silk, which are manifested by its equal and regular form, *by the firmness and resistance to a light pressure on all its parts, but principally at its two ends*, where the resistance to pressure is always greatest. A fine grain, equal and close, are good signs.

When, after having thrust the hand into a heap of cocoons, one takes up a handful, and when we find in all of them an equal resistance to pressure, when, in drawing out the handful, we find a long string connected with the *Blaze* or *Bouvre*, if they weigh heavy in the hand, and when in letting them fall on the floor, they give a sound like that of falling *nuts*, we may felicitate ourselves; *for such are good cocoons!* When *feeble at their ends*, or even at *one end*, they present a sad condition, because being first exhausted of silk at that point, they are penetrated by the water and can no longer be reeled, so that the balance of the stuff on them is lost. These are the *pointed*, or *glassy*, which produce the waste, vulgarly called in the south of France, *Bassin-at*, that is, *sink in the basin*.

A great inequality in the form and in the degree of strength of a cocoon, indicates bad education of the worms, which have suffered. The silk from such is very indifferent.

Where we find them light, stale, giving no sound when shaken, and in which the chrysalis is decomposed, giving a fetid smell, an indifferent silk is expected, as to quantity and lustre.

If the cocoons, taken up lightly in the hand, bend under the pressure of the finger—if they remain *crumpled* together or produce a sound like dry parchment, if they give no sound except a dull one in falling on the floor, *they are weak in silk!*

When the sound given by the chrysalis is sharp and unequal, and when the cocoon is very light, we must examine whether this does not proceed from the chrysalis having been *muscardinée*; (attacked by a sort of moth;) for that circumstance would be fatal to the producer, who should sell it, because the chrysalis would have lost all its weight almost, and this too would be very injurious to the reeler, for it often happens that the

worm attacked by the muscardine, spreads through the inside of the cocoon a whitish matter which sticks together the whole tissue; in such case all reeling is impossible. A loose grain, *unequal and shining* in cocoons is always suspicious, such are the *salinés*, (like satin.) *The size of a cocoon* is not an infallible mark of good quality. Generally, we prefer an *uniform and medium size*. As in all other things, there are exceptions to this rule. Weight is a favorable indication—the fewer cocoons to the pound, the greater the quantity of silk; but before we weigh them we must be sure that the chrysalis has attained its proper state. When the worm has finished its cocoon, he remains still a worm, and keeps his weight, which only diminishes in proportion to the accomplishment of his metamorphosis, and we must take care how we destroy them before they attain the state of chrysalis, for they will then communicate to the cocoon a kind of softness and humidity. This is so well understood at the south of France, that when the existence of the worm is demonstrated by opening a certain number of the cocoons they constitute a case *redhibitoire*.

We always require, before we receive such, that they shall have passed at least six days on the Bruyère (heath) after backward worms have been taken from the hurdles.

Cocoons are, as every one knows, yellow or white, and it is good that the respective colors should be pure and uniform. Many reelers pretend that the white ones are more delicate, requiring more caution in reeling—and this pretence is not without foundation. But a fine color raises the price of silk, and is a benefit. A very serious inconvenience sometimes presents itself with both colors, and that is the difficulty of reeling them, and the breaking or frequent cessation of the thread. And on a first examination of cocoons, nothing can indicate this ruinous condition, because it is never manifest until the cocoon is in the basin, and at the moment of reeling. In such a case, the only way to lessen the injury is to use other cocoons of firmer silk, because a more considerable number of cocoons forming the thread, the reeler has more facility in keeping it even and regular.

Double cocoons, which contain more than one chrysalis, produce a great loss. Being formed of a tissue crossed in opposite directions they are confused and cannot be regularly reeled. We get from such, a silk called *Douppious*, the price of which is hardly the third of that of good silk.

Sudden cold or heat injures the cocoons while forming, and a variable temperature also. Want of proper ventilation is another evil—want of good and regular food makes weak and irregular cocoons. Fresh cocoons

are those which contain living chrysales. We can reel them, but the time for doing it is very short, for we know that after twenty or twenty-four days, according to the warmth of the air, the chrysales become butterflies, soften the cocoon at one end, and make a hole through the tissue and escape. We therefore must hurry the reeling, for when the cocoons are once pierced, we cannot reel them in the basin.

It is to be regretted that the circumstances under which this translation was made did not admit of its being more complete.

On the same subject, Judge Meigs has furnished us the following, also translated by him, from the *O Auxiliador Da Industria Nacional* of Rio Janeiro, January, 1847.

“The production of cocoons is absolutely *worth nothing* without the organization of filatures. The raising and collection of them become sources of depression and disgust, where there is no means of sale or filatures. To send them to Europe to be reeled is totally impracticable.

“The *production* of cocoons and their *reeling* must be organized at the *same time*; and we affirm, without the fear of being mistaken, that the filature is the greatest difficulty for us to conquer. The best method to obviate this evil will be to establish filatures central to the growers of cocoons.”

We shall next call attention to the letter of Mr. John S. Peirce, of Burlington, Vermont. The name of this gentleman has often been before the public in connection with his exhibitions of silk. There has no difficulty arisen which his perseverance has not overcome. What has been considered most remarkable is, that all this has been accomplished so far at the north; and yet, he makes no complaints in regard to climate—but, on the contrary, believes silk culture comparable in profit and ease of execution with any other pursuit of the agriculturist. Letters containing the details of experiments made in the coldest parts of Maine, and in terms of equal confidence, have often been sent us; and there are now in that state quite a number of farmers who testify that the *silk departments* of their farms give better returns for the labor and outlay devoted to them, than any other.

BURLINGTON, Sept. 8th.

A. C. VAN EPPS, Esq.

DEAR SIR,—The press of other engagements has prevented an earlier reply to your favor of the 11th ult., and I cannot now attempt to go into anything like a detailed account of my experience in the silk business. I can only give you a few hints, which, if given to the world through you, may be of some service to my countrymen. I have been engaged in silk culture for five years, and with uniformly good success. The only exceptions have been when, in one or two instances, I have come short of foliage. And although, when I commenced I had never seen a silkworm, and not a person in the place had ever seen a silk reel or a skein of reeled silk, I have succeeded beyond my most sanguine expectations, in

all I have undertaken. In talking the matter over to my wife, we concluded that, as we were Yankees, nothing need be feared, we could in some way find out all about it; and so we went at it, guided rather by common sense, than any knowledge we could obtain from books.

The first ounce of eggs fed by us produced more silk than is often obtained by the most experienced feeders—(about 100 lbs. cocoons.) My wife then set about the reeling of them, and before three pounds were reeled, had conquered the principal difficulties, and now finds it easy to reel $1\frac{1}{4}$ lbs. per day, 10 fibres such as you saw at the Fair.

I have been trying some experiments this season with the various kinds of leaves. It has often been said that it would not do, in feeding worms, to change from one kind of mulberry to another, often.

To ascertain the effects of such changes, I have purposely changed the food nearly every day from their hatching, and have never had worms do better. I have used the White, Broosa, Asiatic, Canton and Multicaulus, and believe it of no consequence what kind they are fed on, so you give them enough of any or all kinds.

With regard to the profit of raising silk, I have seen nothing yet to make me doubt that it may be made better business than ordinary farming; and if we can raise it in the north of Vermont, profitably, I am sure it may be good business in the middle and southern states.

One word about raising trees. Having tried almost all the varieties that grow in our climate, I am fully satisfied that the White and Broosa, rightly cultivated, are better for us than any other.

They should be raised from the seed, and set in hedge-rows. I have fed this season from a plantation three years old; and it would have done you good to see the quantity of leaves produced. I have cut them mostly down to the ground both last year and this. Where they were cut last year they threw up this year a great number of shoots, five and six feet high, which have been cut again this year. In this way I think we can obtain more foliage from an acre than could be obtained from large trees, and it is not a fourth part the labor to gather it.

I remain your obedient servant,
JOHN S. PEIRCE.

Remarks.—Mr. and Mrs. Peirce have been exhibitors of cocoons, reeled and woven silks, in the Fairs of the American Institute, every year since they commenced the business, and have always received the highest premiums for which they have competed.

At the last Fair, Mrs. Peirce exhibited a piece of over 60 yards white silk pocket handkerchiefs, twilled, which, for the beauty and perfection of their finish, were acknowledged by the best judges to exceed any article of the kind ever offered in this market.

This piece of goods received a premium of \$50, the Van Schaick medal, and a gold medal from the Institute. She has before received several gold medals for smaller quantities of similar goods, as well as for cocoons and reeled silk. A considerable amount from the Van Schaick fund also, has before been awarded to her. It is proper here to remark that the Hon. Myndert Van Schaick, of this city, who has manifested great interest in the introduction of silk culture and manufacture in the United States, came forward about three years since and very generously placed in the hands of the American Institute the sum of one thousand dollars, to be appropriated in hundred-dollar premiums upon raw and manufactured silks.

The influence of this encouragement has been salutary and gratifying in the extreme.

The following, from another section of our country, will be read with interest, as it comes from the pen of a gentleman of intelligence, and one who is familiar with the subject and country of which he speaks.

LOUISVILLE, October 10th.

A. C. VAN EPPS, ESQ.

DEAR SIR:—Your letter, requesting some information on the present state of the culture and manufacture of silk in this section of the south and southwest, and my views thereon, is received. I reply with pleasure, though circumstances necessarily compel me to be brief.

In Tennessee and Kentucky, and particularly in the mountain regions, the business is steadily and successfully progressing, though slow. One individual furnishes annually to the manufactory of Messrs. Jackson & Gray of this city, (where a ready market for cocoons and raw silk, at fair prices, may be found,) several hundred pounds of reeled silk. His crop for this season will exceed that of any former year. Others in this immediate vicinity have also produced increased quantities of silk. The worms of the several crops of this season have been entirely free from disease.

I am informed that great efforts are being made to establish this business in some of the cotton-growing regions of the South.

In view of the great acquisition of cotton-growing territory to our Union, it is evident that the price of this staple must forever be reduced to barely a remunerating standard. It is then the wisest policy of the South to diversify as much as possible her products, and I know of no branch that can be introduced with a fairer prospect of success than the culture of silk.

It is admitted on all hands, by those who have investigated the subject, that silk must at some future period become one of the great staples of our country.

When the emancipation of slavery in Virginia, Kentucky, and Tennessee, shall take place, and the consequent influx of a different class of population, these states will become the great central region for the production of this crop.

One of the essential requisites to the successful prosecution of this business in the South, is an intelligent, persevering, and ever-watchful superintendent. If this department can be properly supplied, I can see no reason why the growth of cotton and silk cannot be conducted on the same plantation to the greatest advantage. The worm crop will come on in the early part of the season, when the females, the young and the aged, who are usually employed in the picking season, are comparatively idle; or at least can be easily spared from other pursuits, and will serve to gather leaves for large crops of worms; and the product of their labor more than doubly augmented.

The labor generally, from the introduction of this branch of industry upon the cotton farm, will not be materially increased. The land required is comparatively little, and the cultivation of the trees, when once established, is much less than would be required for the same amount of land in corn.

The uniformity of the climate of most portions of the South is such, that shed or open feeding would best suit the habits of the worms, insure to them a greater degree of health, and relieve the superintendent from much of the care required in close apartments with artificial heat.

Among the numerous emigrants to this country, no doubt, there are many from the silk-growing countries of Europe, whose services are required, and might be advantageously employed in the South and West, though from the peculiar adaptation of our climate to the nature and habits of the worm, some modification in their treatment will be found necessary, which any intelligent attendant, with

the aid of such works on the subject as can be procured, will readily learn to apply.

We use the *morus multicaulus* in the first ages of the worms. After the last moulting—the age in which the material composing the silk is elaborated, we employ the white Italian and Canton varieties; as they abound more in the elements of silk. The latter is superior to the Italian only in the increased size of its leaves, the *morus multicaulus* possessing this advantage in a still greater degree, while it is better suited to the condition of the worm in its earliest ages.

If my humble efforts will in any way aid you, or advance this silk enterprise, please at any time command them.

Very respectfully your obedient servant,
H. P. BYRAM.

Mr. John M. Summy, of Manheim, Pa., in a late letter, says:

"I am not in the habit of writing, and must therefore say little. This county has been producing silk for some time, and we find no great difficulty in making cocoons. In this neighborhood several farmers are engaged in the business. The mulberry principally used is the *multicaulus*, which all consider the best. I have thirteen acres of trees, and shall this season make over two hundred pounds of reeled silk. My mode of feeding is not peculiar. A few words will explain it.

"I give my worms plenty to eat, ample room, and free access to fresh pure air.

"I feed many in shanties, and *prefer out-door feeding*. For spinning the cocoons, I use bundles of long straw.

"We do not get as much for our silk as formerly, but we can feed for much less than half what it used to cost us. Instead of picking our leaves as formerly, we now feed with branches, and even whole trees, which reduces this part of the labor, before very cumbersome, to comparative pleasure.

"No one need undertake this business unless he cultivate his trees, otherwise the quantity and quality must be inferior.

"It has been proved again this season by one of my neighbors, that from 25 to 30 bushels cocoons can be produced from an acre of trees."

Another gentleman, Mr. A. H. Rice, of the same place, shortly after writes:

"I have been engaged in the silk business six or seven years, and am much surprised that any man who is willing to labor for a fair remuneration should become discouraged, or hesitate about engaging in silk culture. I have always been successful in feeding when I have had an abundance of foliage, and I consider my silk crop as certain as that of corn. My crop this year amounts to more than seventy pounds of reeled silk. I convert all of my silk into sewing, and have to purchase more as I work up from six to ten pounds per week."

Remarks.—These are the results of experiments in what would be supposed the most unfavorable region of Pennsylvania. Their winters are long and severe, and their feeding season short, subject to cold nights and

mornings, and heavy dews. Yet these men, and others in the same county, whom we know, have been steadily and profitably pursuing this employment for years, and appear as much at home in its prosecution as others do in the raising of wheat and corn; and certainly it makes *quicker* and *better* returns. Take, for instance, Mr. Summy, with his thirteen acres, producing 200 pounds of reeled silk, worth at \$4 50 per lb., (the price he received,) \$900. Deducting \$300 for the expenses of raising, reeling, cultivation of orchards, and interest on capital invested, which is a very liberal allowance, we have a surplus of \$600, or about \$50 per acre profit.

We are much mistaken if farmers generally in our country are not well satisfied with profits of one quarter this amount.

I do not hesitate in saying that Mr. Summy, with his thirteen acres of *multicaulus*, and a few rough shanties, will make more money than the best farmer in Lancaster county will get from fifty acres from ordinary crops.

And when we consider the difference in the capital invested, and the cost of production, the comparison stands as almost ten to one in favor of silk.

We have given the facts in the case, and the comparison is a fair one.

Now, what is the secret of this success among these German farmers of "Mr. Stewart's state?" Why should they thus outstrip other and more favorable districts of country, and fill their pockets with pelf, while their next-door neighbors grow poor? Why, first of all, a little filature is opened, and it is understood that the man who produces cocoons, can take his whole crop at once, even a large crop, and, by driving over to Mr. Eberly's, or Mr. Summy's, exchange them for money, or its equivalent, with no further delay or trouble; while others, after getting their crops into a marketable shape, have to cart them, load by load, 10, 20, or 50 miles through the mud, to market.

Another consideration, the importance of which has been almost totally overlooked, deserves our attention here. It is the *acclimation* of the silkworm and mulberry tree to that particular locality. It is a subject we have carefully studied, and find it universally true that, where any variety of worm or tree has been continued for a succession of years in the same latitude, there they become most perfect and thrive best. If this be so, it would be well for every grower to obtain eggs of the best species of silkworm, and seeds or trees of the best mulberry, and devote themselves to their *acclimation*.

We will next give the testimony of a distinguished silk grower of Georgia, whose attention has long been enlisted in favor of silk; and who, nearly ten years ago, could boast of having an entire suit of silk, the handiwork of his own family.

MACON, BIBB COUNTY, Sept. 2d.

A. C. VAN EPPS, Esq.

DEAR SIR,—Your letter of the 7th August reached me in due time, but the pressure of other engagements has prevented an earlier answer. The reason I have not corresponded with you as much as usual of late, on the subject of silk culture, has not been owing to a decrease of interest, but because I had said so much, and written so many letters on the subject, and so little apparent good had been effected.

I had therefore made up my mind to do what I could with silk in my own family, and say nothing more about it; and had I not been called upon by yourself or some one else, I should have remained silent; and now I write more to gratify you than with the expectation that much good will be the result.

I might say that Georgia is one of the finest countries in the world to produce silk, and speak of the great benefits to be derived from its culture, but this every body here knows as well as I do; no one disputes it. On the contrary, it is believed to be so easy a thing that, were our planters generally to engage in it, the market would be glutted. And this is actually urged as an objection,—I have heard it again and again. That such reasoning is unfounded, need not be said—but if such a thing could be possible, this is the country, and we are the people to accomplish it; could we be induced to give it our active attention. We have amongst us a vast number of idle persons, useless to themselves and every one else, who might be most profitably employed in making silk. I have hoped to see the day when the multitudes of idle youth and men, who now annoy the country and vitiate society, would be engaged in making silk, but I begin to doubt its realization.

We are now using silk for both summer and winter clothing, and find it better and cheaper than any thing else.

Some very fine vestings have been shown me lately, made in the family of an adjoining planter, which I sold readily at \$4 a pattern.

When I reflect upon the evident advantages which might be derived from this pursuit, and see how men are spending their time and money in the pursuit of objects of trifling value, I can scarcely suppress my indignation. Respectfully yours,

A. C. ERNEST.

Remarks.—We are happy to state that the example and influence of Judge Ernest have not been in vain. We might name several persons in Georgia to whom we have forwarded mulberry-tree seeds, silkworm eggs and silk machinery, during the past year, and it is safe to conclude, from indications we have received, that a speedy revival of the silk interest will take place at no distant day.

We can give place to but one other communication from the South. The writer, Hon. P. H. Green, has made himself practically acquainted with the culture of silk, having made several successful experiments in Maine and other parts of New-England, and, we understand, intends at some future day to establish himself in a favorable location at the South.

DONALDSONVILLE, LA., July 12th.

DEAR SIR,—I am just in receipt of your letter, having been absent for some time to Mississippi city and New-Orleans. I am glad to know that you have selected, as a medium for your communications, a journal in the city of New-Orleans, and shall be disappointed if they are not the means of calling public attention to a subject of vital importance to the state.

In reply to your query, "What you deem important to say on the subject, as to the natural adapta-

tion of our country, particularly the South, for the culture of silk," I have to observe that, since my residence at the South, but one practical fact has been settled in my mind, which is, that foliage can be produced abundantly here; indeed a large proportion of land in the northern and western parts of this state, not sufficiently rich to produce sugar or cotton, is, I have no doubt, admirably adapted to the growth of the mulberry tree, and I am not prepared to say that those sections are not as well adapted to the culture of silk generally as any other region of the globe.

But one objection presents itself, which is the humidity of the atmosphere, and this, unless I have been misinformed, is quite different from what it is on river lands, being much less humid. It seems to me that long before labor in the United States is as cheap as in the old countries, silk will rank among our most important productions—what section will produce the largest proportion is to be determined hereafter. I am inclined to think that it will come from the middle and southern states. In my humble judgment a great error was committed in the early culture of silk in this country, which has been continued down to the present time, that is, the idea that it requires little or no skill to raise silk—that old men and children can do it, &c. This is true to a very limited extent, the labor not being so important as it is nice, requiring careful mathematical as well as chemical calculations.

In order to cultivate silk successfully we must have a sufficient supply of good foliage, sufficient ventilated space, proper attendance and an appropriate temperature. With these, silk can be produced anywhere; without them, nowhere.

With regard to temperature, I believe it has been ascertained by actual experiment, that from 70° to 80° is best for silkworms, and that the highest point matures them in a shorter time than a lower degree, and that they then make more and better silk. The silkworm is a native of a warm climate, and must have a warm climate, *natural or artificial*, to make it thrive well.

With great respect, your obedient servant,

P. H. GREEN.

A. C. VAN EPPS, Esq.

PORTLAND, Aug. 29th.

DEAR SIR,—Yours of the 16th came duly to hand, and right cordially did I receive the information of the prospective advance in the silk culture in the southern portion of the states. Not only at the "South," but also a "still small voice" is giving encouragement at the North, if we take the general expression, and extended inquiry and observation, as a messenger.

The few who have withstood the cold battling scorn and sarcasm which have been so rife for a few years past, will soon be looked up to as the permanent friends of their country. It is only the Roman firmness that can place the silk cause on a permanent foundation. The motto, "that what we see we know," I think will soon give Yankee enterprise a jog that nothing can stop until we see on every farm a plantation of mulberry, and a portion of the family directed to the employment of silk-growing. To comply with your request I must refer you in part to my letter to the American Institute for 1845, with this added, that my operations still encourage me, and that every year I can improve in my manner of feeding, and produce cocoons of increased value as to quality—also produce the worm at maturity without finding diseased worms, which was the whole crop this year. I do not think I had 100 in my whole crop this year. Plenty of room, fresh air, strict cleanliness, and a good supply of firm, fresh leaves, as often as every hour, is the secret.

What I should say as theory, is just what I should certainly put in practice.

What the introduction of cotton has, the silk cause must suffer, and after years of patient toil, we shall see the silk of America, not only save the millions which we expend and throw into the lap of monarchy saved to pay American operatives, and

draw forth American skill and ingenuity, until like our cotton fabrics, we will surpize the "old world" by the exposition of our silk fabrics in Europe's great metropolis, after paying charges and duties (not free trade) cheaper than those of their own manufacture. What! says one to me the other day! We make silk cloths in America! What total ignorance are our people in! Could the people of the states be generally informed through the press of the extent to which the silk culture and manufacture is carried on, I think there would be greater action both *national* and individual.

It is only by disseminating knowledge on any department of industry, and the American people will give thought to it; for it seems instinctively true, that the Yankees are ready for anything they can see a dollar in. Could there be a statistical form given of the probable amount of raw silk produced annually, also of manufactured goods, in connection with the number of manufacturing establishments, and the amount of raw material used—what proportions American and what foreign, and the comparative value of American over foreign, in dollars and cents, and the expense of raising cocoons, their value in market, &c., &c., and those statistics published by our most widely-circulated weekly journals, I think we might soon draw into the field a strong corps of enterprising men, who will push the cause along until it shall be no more the theme of ridicule.

With silk as with cotton, it has barriers to surmount; and those a public opinion; for information can be obtained from the experience and philosophical treatment of the worms by very many who have given the subject their study. Again I will say, let the cocoonery be open for a free circulation of heaven's blessing, pure air; next feed often with fresh and well-matured leaves; often—once an hour; a strict and thorough cleaning both shelves and room; the shelves cleaned by changing; the worms spread so as not to be crowded on the shelves—plenty of room, and after the last moulting, feed on branches cut. You will recollect last year I gave information of a rack-swing I used for branch feeding; this year I used it as a stationary rack, by nailing boards on the standards for my shelves and laying loose sticks upon them three or four inches apart, then putting the branches upon them. Now then, sir, any one who will follow these directions need not fear but that they can grow the silkworm successfully. As for the profit, I think it will equal any other agricultural operation.

No one need expect that they can become vastly rich in one or two years *merely because they are in the silk business*—but perseverance will give good returns.

E. S. BARTHOLOMEW.

A. C. VAN EPPS, ESQ.

Remarks.—The author of the above is located in one of the coldest parts of New-York, where his trees are much exposed to the rigors of winter, and where he is very liable to interruptions by untimely frosts; yet he has been one of the most successful feeders in this state.

His cocoons have been forwarded to our filatures, and are very fine. Quite a number of farmers in the western part of this state have prosperous silk departments connected with their farms, from which they are realizing good profits. The undertaking was induced by the existence, for a while, of a filature at the state prison at Auburn.

This enterprise, unfortunately, was sacrificed to party changes, and many who had been led to plant out orchards of mulberry trees, soon abandoned them, and the business

has generally ceased, except where partial markets have been offered.

A few of those who were most largely engaged in the business, acquainted themselves with reeling, and several hundred pounds of reeled silk are received here yearly.

The probable product of raw silk in this state, at the time the prison market was discontinued, must have been several thousand pounds. Much that is now made is worked up into sewing silk and fabrics of various kinds. We shall here terminate our correspondence. More than one hundred other letters are before us, received within the past few months, from various parts of the United States and the West Indies. They express but *one opinion* on this subject, that of *universal confidence*.

We speak advisedly in saying that *our people are ready for the work*, and will promptly second any well-directed action of the national or state governments. The question then arises, in what way *can* our authorities render the most efficient aid?

The only course we would suggest for Congress, and it has been most thoroughly tested, would be to imitate the example of England. Protect, by *liberal duties*, all classes of silk which we are capable of manufacturing, *so liberal*, that the advantage shall be unquestionably on the part of our own people. The *raw material* should be admitted at a very nominal duty until our manufactories are firmly established, and the *culture* of silk pretty generally adopted.

We have already intimated the course to be pursued by the states individually.

But more particularly. Every state should have its filature, of sufficient capacity to receive and dispose of all the cocoons offered, for which cash should be paid.

This should be established in a central location, most accessible to all parts of the state; and connected with this should be a nursery, of at least fifty to one hundred acres of the best varieties of the mulberry trees, from which to supply, *freely*, all applicants residing within the state, who, upon receiving the same, would become obligated to employ them in a manner prescribed by laws regulating the management of the filature and nursery.

This establishment would not require a large appropriation, and after five years would pay all its expenses, and yield a *surplus* as a *sinking fund*, for the reimbursement of the state.

The *foliage* from the nursery, *alone*, would be of immense value, if properly employed. Even at the moderate calculation of one-half of what has been shown to be a *reasonable product* from silk culture, we should have a revenue of no mean amount.

The filature, too, would not be without its *profit*, and it is believed that the *paupers* of

the state might be made to perform the principal part of the labor of both departments.

With such a *pre-inducement*, bounties for the production of cocoons might be offered with advantage—otherwise, *all legislation*, in the opinion of the writer, is *utterly futile*.

With these suggestions, we leave the subject with our fellow-citizens, in the hope that its great importance may be duly considered, and such measures employed as shall ultimately lead to the establishment of the *silk industry* as a permanent and profitable pursuit of our people. The *curing, transportation and reeling* of cocoons, and the *preservation of worm eggs*, will be made the subjects of another article.

SHEEP HUSBANDRY IN THE SOUTHERN STATES.—The celebrated, but eccentric John Randolph, "of Roanoke," whose eccentricity often got the better of his reason and logic, and led him into vehement and bitter denunciations of even the most grave and important measures, had, for some reason not very satisfactory, contracted a most bitter antipathy to sheep and the raising of wool. He even went so far once, on the floor of Congress, as to declare that he would go any time out of his way "to kick a sheep!" John Randolph, however, was but a man; and time has shown that all his prejudices against attempts at sheep husbandry, in the South, and particularly in his own state, Virginia, were groundless—founded in a want of knowledge of the capabilities of the South for this very important branch of rural economy.

Others, though not as renowned, but perhaps more free from prejudices, have also made the most sweeping denunciations of wool-growing in southern latitudes; and, undoubtedly, this opposition has contributed greatly to retard the progress of sheep husbandry in the South, by engendering in the minds of agriculturists deep prejudices against it, or, at least, doubts of its practicability and profit. These doubts, however, have been gradually disappearing, and for many years past there has not been a single southern state in which wool was not more or less raised. We have not the last census (1850) to quote,* but that of 1840 will an-

swer our purpose. According to that census, the quantity of wool raised in the states south of the Ohio and Potomac, and west of the Mississippi, was as follows:

	No. Sheep	Lbs. of Wool
Virginia.....	1,293,772	2,538,374
North Carolina.....	538,279	625,044
South Carolina.....	232,981	299,170
Georgia.....	267,107	371,303
Florida.....	7,198	7,235
Alabama.....	163,243	220,353
Mississippi.....	128,367	175,196
Louisiana.....	98,072	49,263
Tennessee.....	741,593	1,060,332
Kentucky.....	1,008,240	1,786,847
Total.....	4,478,852	7,133,187

Since 1840, sheep-raising has made great progress in the South, and there is an increasing attention given to it. In many of the states, and particularly in Texas, since its admission into the Union, this is true. Many persons of capital, and of experience in sheep-raising, have not only devoted much time, in Texas, by rearing the ordinary breeds of that state, but they have expended large sums in importing the finest breeds from the North. There is now* in New-Orleans, on board of a vessel just arrived from New-York, twenty-four full-blooded sheep, of the best Merino, on their way to Corpus Christi, to which place they are imported from Vermont, for the improvement of the Texas and Mexican breeds. The lot consists of eighteen bucks and six ewes, covered with magnificent fleeces of silky fineness. They cost about \$8 per head in Vermont.

Of sheep in Texas, we can speak from personal observation. There is no country in the world where they thrive better, or with so little cost and trouble.

The progress of sheep husbandry in the South is not as rapid as it might, and un-

Virginia.....	1,311,004	2,860,795
North Carolina.....	595,249	970,738
South Carolina.....	281,754	487,222
Georgia.....	560,435	990,017
Florida.....	23,311	23,247
Alabama.....	371,800	657,116
Mississippi.....	304,929	559,619
Louisiana.....	110,333	109,897
Texas.....	99,093	131,374
Arkansas.....	101,257	182,595
Tennessee.....	811,537	1,364,378
Kentucky.....	1,070,303	2,224,685
Ohio.....	3,937,086	10,111,288
Michigan.....	746,435	2,043,283
Indiana.....	1,122,493	2,610,287
Illinois.....	894,043	2,150,113
Missouri.....	756,309	1,615,580
Iowa.....	149,960	373,898
Wisconsin.....	124,892	253,963
California.....	17,574	5,520
Minnesota territory.....	80	85
Oregon territory.....	15,282	29,666
Utah territory.....	3,262	9,222
N. Mexican territory.....	377,271	32,901
Total.....	21,571,306	52,417,282

* March 13, 1852.

* Now received. The following are the statistics of sheep:

1850	No. Sheep	Lbs. of Wool
Maine.....	440,943	1,362,986
New-Hampshire.....	384,750	1,108,476
Vermont.....	919,992	3,410,963
Massachusetts.....	188,651	585,136
Rhode Island.....	44,296	129,692
Connecticut.....	174,181	497,396
New-York.....	4,453,241	10,070,301
New-Jersey.....	160,488	375,854
Pennsylvania.....	1,822,357	4,401,570
Delaware.....	27,503	57,768
Maryland.....	177,902	480,226
District of Columbia.....	150	525

doubtedly would be, if more exact information on its great practicability and advantages was diffused among our agricultural population. There is much inquiry on the subject. Many old prejudices still linger, and such questions as the following are frequently asked:

1. What is the effect of climate on the health and wool-producing qualities of sheep in the South?

2. Is the soil, herbage, &c., of the southern states adapted to sheep husbandry?

3. What are the profits on sheep husbandry in the southern states?

4. Is there a constant market for wool, and what are the future prospects of it, as to demand and supply?

5. What are the most profitable breeds of sheep for the South?

6. How ought sheep to be managed in the South?

These questions we propose to answer as fully as our space will admit, for the benefit of such readers as take an interest in the subject.

I. In regard to the effect of a southern climate on sheep, we will discuss this under two heads: the effect upon the health of sheep, as mere animals; and the effect on the quantity and quality of the wool.

That our southern climate is unfavorable to the health of sheep, is disproved by the experience of many years. All who will take the trouble to look into the history of sheep, in the old world, will see that it is an animal that has, from time immemorial, been bred on the eastern continent, from the equator to the snows of Scandinavia—from the burning plains of Asia and Africa to at least the 65th parallel of north latitude. The power which the sheep possesses of accommodating itself to different climates seems almost unlimited. It seems to thrive equally well on the hot plains of Hindostan, or in the frozen regions of Thibet. We have observed it extensively in New-York, Massachusetts, and other states, and in the high, undulating regions of Texas; and in both regions it thrives equally well; if anything, better in the South than in the North. There are now not far from 100,000 sheep in Louisiana. South of the 32d parallel of latitude, it is estimated that there are, in the southern states, between two and three hundred thousand sheep at the present time, and the number is constantly increasing. By the table which we have given above, it will be seen that there were, in 1839, more than 4,400,000 sheep in the southern states. The fact that the animal is rapidly increasing in numbers in the South shows that the warmth of the climate is not unfavorable. We may regard it as a settled fact, that the climate of the South is highly favorable to the health of sheep. The ani-

mal thrives in even the most unhealthy localities of the South—along the low, fenny, tide-water region that skirts the Gulf of Mexico, on the margins of Great Okefinokee swamp, in Georgia and Florida, and in the swamps of the Mississippi. In the parish of Orleans there are some 2,000 sheep; in Jefferson, about 7,000; St. Mary's, 8,000. In all parts of the Delta they are found in large numbers; and that they are healthy in all this region is a matter of notoriety.

Let us now consider whether the quantity of wool, which a sheep produces, is less in the South than in the North. The following table will answer this query; it is compiled from the U. S. census for 1840:

		Av. weight.	
Wool, per sheep, in	Virginia	17 $\frac{1}{4}$	ozs.
"	" N. Carolina	16	"
"	" S. Carolina	19	"
"	" Georgia	19 $\frac{1}{4}$	"
"	" Florida	17 $\frac{3}{4}$	"
"	" Alabama	17	"
"	" Mississippi	23 $\frac{3}{4}$	"
"	" Louisiana	17 $\frac{1}{4}$	"
"	" Tennessee	18 $\frac{3}{4}$	"
"	" Kentucky	23 $\frac{3}{4}$	"
"	" New-York	21	"

From this it would appear that the quantity of wool, per sheep, in the South, is greater than in the North. It must not be concealed, however, that the U. S. census for 1840 is far from being reliable; but as its defects affect the North as well as the South, it is as fair for the one as for the other. For all purposes, however, requiring exactness, it might as well not have been taken. We could easily verify this observation, but it would be a digression from our subject. It is a pity, that men, well paid by the government for making census returns, cannot do their work correctly.

In comparing wool-growing in the South with that of the North, we are to bear in mind, that in the South the business thus far has received but comparatively little systematic attention; while in the North wool-growing is as old as the republic itself, and has long since been reduced to a system, conducted upon the most scientific and expensive plans. Every attention there has been paid to the breeding of sheep, and importations of the best stock have, from time to time, been made from Europe; while in the South sheep have received little attention, being suffered to breed promiscuously, and to roam through the forests without being regularly sheared.

"From all well-known facts," says Mr. Henry S. Randall, of New-York, a distinguished writer on sheep husbandry, "warmth of temperature, at least to a point equaling the highest mean temperature in the United States, is not injurious, but absolutely conducive to the production of wool. The causes of this are involved in no mystery.

Warm climates afford more green and succulent herbage during a greater portion of the year than cold ones. Sheep, plentifully supplied with green herbage, keep in higher condition than when confined to that which is dry. High condition promotes those secretions which form the wool. Every one at all conversant with sheep well knows, that if kept fleshy the year round, they produce far more wool than if kept poor. A half a pound's difference per head is readily made in this way. Within the maximum and minimum of the product of the sheep or of a flock, the ratio of production always coincides with that of condition.*

Having thus shown the effect of climate upon the *quantity* of wool, we now proceed to consider its effect upon the *quality*.

There can be little doubt that the hair and fur of animals is finer in cold climates than in warm. The cause of this is, perhaps, not fully determined. Some writers attribute it to the effect of cold and heat in contracting or expanding the pores of the skin, supposing the size of the hair to be proportioned to the size of the pores. The pores, in cold climates they say, being greatly contracted by the cold, suffer only fine hairs to pass, the reverse being the case in warm climates. This is a theory which needs confirmation. Indeed, it would seem to be refuted by the fact, that many quadrupeds, especially those of cold climates, have two kinds of hair growing together, a long, coarse kind, forming their visible external covering; and a shorter, finer, and more abundant kind, lying concealed by the other, and close to the skin, called *fur*. If the cold has anything to do directly with the growth of the hair, why does it cause some to be fine and the rest coarse on the animal!

The chief difference between animals of hot and cold climates is, in respect to hair, that the latter have two kinds of natural covering, a coarse and fine; while the animals of hot climates have only the coarse, the fine being unnecessary. The sheep of Bengal are coarse and hairy; but these have been found, on being transported to Port Jackson, in Australia, in the latitude of South Carolina, to lose all their hair, in the short time of three years, and to assume a fleece of wool.

Australia, too, furnishes evidence of the perfect adaptation of warm climates to the growth of wool. The exportation of wool from Australia, in 1843, amounted to 16,226,400 lbs.

That the quantity and quality of the wool is dependent, in a great measure, on the kind and amount of the food received by the animal, is attested by all of the most able writers on the subject. Mr. Youatt, an eminent writer on sheep, says: that "pasture has a

far greater influence on the fineness of the fleece" than climate. It is admitted, too, that a change of climate, from a cold to a hot region, does not necessarily produce coarse wool; but that such deterioration may be counteracted by careful management and selection in breeding. Long experience in all climes has established this. "The preservation of the Merino race," says M. Lasteyrie, "in its utmost purity, at the Cape of Good Hope, in the marshes of Holland, and under the rigorous climate of Sweden, furnish an additional support to my unalterable principle, that fine-wool sheep may be kept wherever intelligent breeders exist."

We might cite many eminent authorities to prove that wool may be grown in all its purity and fineness in warm climates. The wool of Australia, in latitude 33°, is pronounced superior in softness and fineness to the wool of Germany in latitude 50° north. Mr. Mark R. Cockrill, a large sheep-raiser in Madison county, Mississippi, who imported Saxon sheep in 1824, says: "I find no falling off in quality and quantity of their fleeces; on the contrary, I believe there is a little improvement. Their fleeces are a little more compact than formerly, hence more weight; and, from our mild climate, the staple has become longer. I assert it to be a fact, that the latitude I am now in, Madison county, Mississippi, latitude 32° north, is better than any country north of it to grow wool, as the sheep can keep all the time grazing by sowing small grain. The wool of the fine Saxon sheep in this climate is softer and more cotton-like than any I have ever seen. The superiority of my wool I ascribe to our climate, and the provision for the sheep of succulent food the year round."

The authorities cited above prove the great point in question, namely, that southern latitudes are not incompatible with the growth of the best of wools; and that, in some respects, they have the advantage of cold latitudes in furnishing flocks constantly with green pastures, and in there being none of the winter expenses of northern countries to defray.

II. *Is the soil, herbage, &c., of the southern states adapted to sheep husbandry?*

But little need be said on this question. All who are acquainted with the South know that even on our poorest lands there is ample food, or there can easily be made to be ample food, for vast flocks of sheep. Undoubtedly, the poorest worn-out lands of the South could be made to furnish sufficient grass for sheep, and thus be rendered highly valuable. A moderate capital would stock them with the best breeds from the North, which, with proper attention, would yield annually a certain and unfailing crop of wool—a crop that would be exempt from the uncertainties of that of cotton. Lands now abandoned, or those of the low tide-water region covered with pines, could be made vastly

* Randall's Sheep Husbandry in the South, p. 22.

productive and profitable in wool. They could be made to yield sufficient grass to feed thousands of sheep, that, with but little care to their owners, would yield their valuable fleeces. Nearly all of those lands in the South, now regarded as nearly worthless, could be made to produce wool at very little expense.

All of the most sterile lands of the South could be made to yield an abundance of the Bermuda grass, thus converting all abandoned fields into permanent pastures that would support thousands of sheep, requiring but little attention, save the shearing of them. There is, therefore, no obstacle to the raising of sheep, in the South, arising from a want of suitable food. The whole tide-water zone of the South, extending from twenty to one hundred miles from the sea-coast, could be easily converted into a sheep-growing region.

III. *What are the profits on sheep husbandry in the southern states?*

In many, if not in most situations throughout the South, sheep will obtain sufficient food from the pastures during the whole year, so that they are at no expense to the owner during winter for food or shelter. The items of expense, then, in the raising of sheep, would be interest on the purchase-money of lands and sheep, to begin with, the expense of shearing and supervision, and the loss of sheep by death. On the other side of the account, we should have the value of the wool and the increase of the flock. Lands fit for sheep-raising can be purchased at \$1 25 per acre, and ordinary sheep are worth \$2 per head. Wool is worth at present from 30 to 35 cents per pound. During the last fifteen years, the price has ranged between 30 and 50 cents. It is allowed that there may be three sheep to every acre of land. The increase of a flock is about eighty per cent., and lambs are worth 60 cents each. In the South, the expense of supervision need not be anything, as old superannuated negroes could watch sheep. The shearing would cost not over \$2 per hundred if done by slaves.

From these data we construct the following statement:

<i>Dr.</i>	
100 sheep, interest at 8 per cent. on the purchase-money, at \$2 a head	\$16 00
Interest on 33 $\frac{1}{3}$ acres of land, at \$1 25	3 33
Expense of shearing	2 00
Loss by death, 2 per cent.	4 00
Total	\$25 33
<i>Cr.</i>	
By 300 lbs. of wool, at 30 cents	\$90 00
Increase of 80 lambs, at 60 cents	48 00
Total	\$138 00
	25 33
Gain	\$112 67

The above rates are put much lower than those given by others. It is estimated that the entire cost of raising a pound of wool in the South, is not over 5 1-12 cents; but the market price of wool is not less than 30 cents. A very safe estimate of the cost of raising one pound is eight cents, as given by Henry S. Randall, Esq., in his very complete work on sheep husbandry in the South. It will be readily seen by the above, that the profits of wool-growing are infinitely greater than those of cotton, even at the present prices.

The expense of keeping sheep in the South is very little. The Hon. Mr. Coles, a member of Congress from Virginia, states, that his flock of 200 sheep, kept in good condition summer and winter, did not cost him \$10 a year. Their wool, at 3 pounds per head, would be 600 lbs., worth, at 30 cents, \$180. In the official documents of the U. S. Patent Office, for 1849, it is stated that the annual expense for keeping sheep in Texas does not exceed 25 cents per head.

The South is at present the only country in the Union where wool-growing can be made profitable. In the above-mentioned report of the patent office it is stated, that the keeping of sheep in New-York costs from \$1 to \$1 25 per head; in Ohio, \$1 to \$1 37; in New-Hampshire, \$1; Vermont, \$1; in Pennsylvania, \$1. The keeping of 200 sheep, then, in Ohio, for instance, would cost \$200 per annum; but these 200 sheep would only produce 600 lbs. of wool, which, at 30 cents, would be only \$180. In the statement which we have given above, it will be seen, that in the South there would be a clear gain of \$112 67 on 100 sheep, or \$225 34 on 200. The great advantage which we derive from our southern climate will soon make ours the great wool-growing region, as it is now the great cotton and sugar-growing.

The gross cost of producing a pound of wool in the southern states, at the highest estimate we have seen, is eight cents; in New-York it is 27 $\frac{1}{2}$ cents. This great difference is owing to the greater cheapness of our lands, and of slave labor, and to the climate, which here enables the flocks to live in the fields the whole year, without any expense for food or shelter.

Thus far we have considered only the direct annual profit or loss of sheep husbandry in the South. Let us now look at some of the more remote, collateral, but equally certain advantages which the South would derive from this branch of husbandry.

It is well known that there are thousands and tens of thousands of acres of land in the tide-water and hilly regions of the southern states that have either become "worn out" by long cultivation, or are naturally too sterile for tillage. Can these "old fields," these deserted plantations, these sterile wastes, be reclaimed or made arable? Thousands are

constantly deserting their old homes, their places of nativity, the fields upon which their eyes first rested, and which their hands first tilled, because they say that their lands are worn out, and they can live upon them no longer. Is there no remedy for this? Yes; the introduction of sheep husbandry. These worn-out lands yield enough to sustain large flocks of sheep, at least three to the acre. Upon 1,000 acres of these old lands 3,000 sheep can find subsistence; and while they do this, they are at the same time fertilizing them. How is this? The manure of the large flocks that might be placed upon them gradually enriches them, and thus increases their herbage. Thus, in a few years, poor and scanty pastures are converted into rich productive ones. The sowing of the fields with the Bermuda grass, too, which will flourish on almost perfectly barren soils, should commence with the introduction of the sheep, and one would help the other. The grass would be returned to the soil in the form of manure, and in a few years the old, worn-out, deserted fields, would be fit for the plow. "The Bermuda grass," says Mr. Affleck, "grows luxuriantly in every kind of soil. It possesses an additional advantage—that of binding the loosest and most barren sandy tracts." It spreads rapidly, is hard to eradicate, and is, besides, a favorite grass with animals.

It may be asked, why are sheep better for ameliorating worn-out lands than horned cattle? The answer is, because sheep will thrive on lands where other animals could not—where other animals could not get enough to eat. English agriculturists consider that the sheep on their lands are the chief support to their fertility—that they keep the fields fertile. They regard the *fleece* as the smallest part of the good to be derived from them. A writer in a London agricultural journal observes: "The *very fleece* shorn annually from their backs is worthy of consideration." Here, in America, the "very fleece" is everything.

The point to which we wish to call the attention of all engaged in agriculture in the South, is, that they should immediately stock all their old worn-out fields, if any such they have, with sheep. They will thus render those fields, in a few years, fit for the plow, and in the mean time be deriving a handsome profit from their flocks.

It being now shown that the South is the best country in the world for raising sheep, and that the profits of sheep husbandry are great, we shall proceed to consider—

IV. *Whether there is a constant market for wool, and what are the future prospects of it as to demand and supply?*

Should the South go as extensively into the business of wool-raising as is recommended, the quantity of wool produced annually in the United States would be enormously increased;

and the question naturally arises: "Would there be a market for all this wool? If only one-eighth part of the lands of the South was devoted to sheep, at the rate of two to the acre, and each furnished 3 lbs. a year, the South would annually produce more than 54,000,000 lbs. of wool, which, at 30 cents, would be worth \$16,200,000. If the present supply of wool, taking the whole world into account, is adequate to the demand, it is evident that an increase of wool-growing in the South, unless it is diminished to the same extent in some other quarter, would soon create an overstocked market. We do not at all admit that the present supply of wool is equal to the demand. One thing is certain, the entire wool crop of the United States is nothing like sufficient to supply the demand in the United States alone. In 1850 we imported 18,000,000 lbs., worth, at 30 cents, \$5,400,000. We exported, during the same year, wool to the amount of \$22,778.

For several years past, the raising of wool in the northern states has been diminishing, and at the same time the business has been increasing in the South. Northern wool-growers ascribe this phenomenon to the operation of the tariff of 1846; but the real cause is due to the facts which we have already pointed out, showing that the South is better adapted to wool-raising than the North, in many parts of which, the expense of keeping ordinary sheep is more than the value of their wool. It is only the very best breeds, producing the finest wool, that can pay a profit in the North. A late writer on the subject states, that wools that do not bring less than 45 or 50 cents per pound, are the only ones that the North can raise with profit. In the South, as we have shown, a large profit can be made on even ordinary sheep, and that, too, with no trouble except the watching and shearing.

As sheep husbandry advances in the South, it will disappear in the North, so that we need not apprehend the want of a market for southern wool. The South is destined to monopolize the business entirely in North America, and we can now raise it here at less expense than in any country in Europe. It will not be long before wool-raising will be abandoned in this country, north of the 40th parallel of north latitude, if we except, perhaps, Oregon, where the isothermal line is at least 5° north of its course east of the Rocky Mountains.

Much has been said in favor of the prairies of the northwest, as affording great facilities for sheep-raising; but the experiment has been tried, and failed. These prairies are bleak, cold barren wastes in winter, that afford no food for animals—and hence, sheep need as much housing and feeding there as east of the Alleghanies; besides, prairie lands devoted to sheep would need fencing, but they are destitute of timber, and there is also a great scarcity of water.

The wool-producing countries of the globe that are able to come at all in competition with us, are embraced chiefly in a belt or region about 15° in width, in each side of, and at different distances from, the equator. The position of this zone is governed by the temperature. The wool zone, if we may call it, is bounded by isothermal instead of latitudinal lines. In the southern hemisphere, South America, Australia, and the Cape of Good Hope, are the only countries that might compete with us. In South America, the wool-growing region embraces about two-thirds of Buenos Ayres, all of Chili, the little country of Uruguay, which is about two-thirds the size of Texas, a mere point of Brazil, and the north part of Patagonia. The *pampas* of Buenos Ayres, like the prairies of North America, are covered with tall grass, and are destitute of timber. They present the same objections to sheep-raising as our prairies. The cost of transporting the wool to market is great, for there is none but a foreign market; and besides, the tariff of 1846 levies a duty of 30 per cent. *ad valorem*, without regard to quality; so that the lowest priced foreign wools cannot enter this country without paying a duty of about four cents on a pound, which is half what it costs to raise a pound in our southern states. Lands, it is true, are worth, in the Argentine Republic, only about ten cents an acre; but the instability of the government is a powerful discouragement to all branches of industry; the agricultural population is wanting industry and skill; and foreign capitalists do not like to venture. The wools of Buenos Ayres cost there about 15 cents per pound, to which we must add commissions, United States duty, freight and insurance, which make the very coarse South American article cost here not far from 30 cents, at which price we can furnish wools of the same inferior quality, at a high profit. So that we have nothing to fear from South America. Let us now look at transatlantic competition.

England, Ireland and Scotland had, in 1839, 32,000,000 of sheep. England and Wales, with an area less than that of Virginia, had about 7,000,000 more sheep than the whole of the United States. But the whole, or nearly the whole of the wool of Great Britain is consumed at home. It exports only its coarsest wools, and this because others are foolish enough to buy what English manufacturers think unfit for their use. England does not produce wool enough for its own manufactures. In 1840 it imported 46,221,731 pounds. Much of the cheap, coarse, cast-off wools of England have been shipped to this country, and are included in the 18,000,000 pounds that we imported in 1850. As England has to import vast quantities of wool for her own consumption, we need not fear her competition.

Spain, and the whole of the Peninsula, once so famous for its wools, is now sunk to a fifth or six rate wool-producing country. Both in

Spain and Portugal wool-growing has rapidly declined since 1810, and is still declining. Portugal then yielded more than 3,000,000 lbs. annually; now only about 350,000 lbs. Spain, in 1810, yielded nearly 6,000,000 lbs.; now only about 1,000,000 lbs. annually. Germany and Prussia have reached their climax, as wool-growing countries, and for the last 20 years have been declining.

France finds it better economy to cultivate grain, vines, fruits and silk, than wool, in those of her departments adapted to sheep husbandry; and since 1825, her exports of wool to England have declined from 436,000 to 48,000 pounds.

Of Italy, we may say, that there is not the remotest prospect of her ever becoming a wool-growing and exporting country.

Turkey, though tolerably well adapted to sheep husbandry, exports but little wool. The proud, indolent Turk, spurns all rural labor, is destitute of enterprise, and, moreover, his government affords him no encouragement. Destitute of any security to person or property, which is liable to be seized at any time, or which he is often compelled to sell at forced sales to meet oppressive taxation, the Turk has little inducement to increase his flocks.

Of the Cape of Good Hope, as a wool-growing country, nothing very favorably can be said. Nearly seven-tenths of the colonial territories are destitute of vegetation during a greater part of the year, according to Mr. Barrow. If we may believe the accounts of the Rev. Robert Moffat, who resided at the Cape 23 years, as agent of the London Missionary Society, the greater part of the country is doomed to perpetual sterility and drouth. Besides, lions, tigers, hyenas, jackals, wild dogs, &c., are so numerous and ravenous that sheep must be incessantly watched. But the worst of all, the sheep-destroyers are the natives themselves, whose ravages are incessant. At the present time, especially, in the war which they are now carrying on with the English, their ravages of sheep, and cattle of all kinds, are very extensive. But, even if the English should succeed in effectually subduing the natives, the character of the country must ever render it unfit for wool-growing. Extreme drouth, says Mr. Moffat, continues for years together.

Of all the wool-growing countries of the eastern hemisphere, south of the equator, Australia ranks first. It has an area about equal to that of the United States, but greatly inferior to it in fertility of soil. "The truth is," says Mr. McCulloch, "that the bad land bears a much greater proportion to the good, in New-Holland, than in almost any other country with which we are acquainted." The country is peculiarly subject to drouths, which continue two, three, and four years together, destroying all vegetation. The drouth in 1841 destroyed 70,000 sheep.

It is difficult to find a place in Australia

where sheep do well. Disease there, among sheep, too, appears to be peculiarly inveterate, causing frightful losses. The astringency of the water and other causes, produce severe epidemics. In some years they carry off half the flocks, in some regions. The shepherds being *convicts*, have often, through spite to their masters, caused whole flocks to be infested with the *scab*, by driving them into contact with diseased flocks. The chief source of the wealth of Australia is thus in the hands of these worthless convicts. The sheep of Australia are subject to the depredations of various animals, particularly the wild dog; but the *runaway convicts*, with whom the country is filled, are a worse enemy than the dogs. They live upon the flocks. Sheep there have to be folded every night, and guarded by watchmen and dogs, with fires, to keep off wild beasts. Mr. Samuel Lawrence says, in one of his letters to Mr. Randall: "I saw a gentleman from England, a few months since, who has an admirable flock in New South Wales, of 25,000 sheep; and he assured me that he had not received a penny of income from them since 1838."^{*}

With such a picture before us of wool-growing in Australia, and the fact that it is 13,000 miles from any market for wool, we have not much to fear from Australia.

From a consideration of all the foregoing facts, Mr. H. S. Randall, in his work on Sheep Husbandry, draws the following conclusions:

1. "That wool-growing is never likely to permanently and importantly increase in any of the countries of Europe, unless it be in Hungary, Turkey, and the south of Russia.

2. "That it is more likely to decrease than increase in Great Britain, France, Portugal, and Italy.

3. "That such a decrease is next to certain in Spain and Germany, (including Prussia and Austria,) excepting Hungary and Transylvania; that the decrease will be much more considerable in Germany; that its rapidity and extent will be proportioned to the rapidity and extent with which the market is supplied from countries which can grow wool cheaper, such as North and South America, Hungary, Southern Russia and Australia.

4. "That wool-growing will undoubtedly largely increase in Hungary and Southern Russia and that it *ought to* in European and Asiatic Turkey, but will not extensively, un-

til the character of the people and their political institutions are changed."

5. "That it will also increase at the Cape of Good Hope, Australia, and Van Dieman's Land; but that its economical extension in either of these countries is limited, especially if America becomes a competitor.

6. "That no part of the Eastern continent, or its islands, all things considered, possess equal advantages for wool-growing with some parts of the United States."

The climate of our southern states, for sheep, is not excelled by that of any other country; our soil is generally more fertile; we have an abundance of good water, and no long drouths; we have no localities too unhealthy for sheep; and we are four times nearer the European market than Australia. It is certain that if we raised more wool than necessary to supply our own market, we could export it at a fair profit. This is true even of the wool of the northern states.

Since the southern states, as we have shown, can produce wool for *one-third* the cost of northern wool, they could drive all the European nations from the market, with two or three exceptions, and with these they could successfully compete. So that there is no good reason why the South should not immediately embark in the production of wool.

What are the prospects of an increased demand for wool in Europe? Tables of importation show that there has been an increasing demand for wool in Europe ever since the commencement of the present century. In 1771, England imported only 1,829,772 lbs.; in 1810, 10,914,137; in 1825, 43,795,281; in 1840, 52,000,000. The same increased demand for wool has taken place in this country. There is an increasing demand for wool as well as for cotton throughout the civilized world, and this demand will keep pace with the progress of civilization, which incessantly increases our wants.

Our own country already affords a market for 18,000,000 lbs. more of wool than we produce. If our population continues to increase as heretofore, in ten years from this time there will be a demand in the United States for at least 137,000,000 lbs. of wool annually.

From the preceding facts it would appear, that the future prospects of the wool market are sufficient to justify very extensive operations in sheep husbandry. We now proceed to consider—

* The recent discovery of gold in Australia has been followed by an extensive abandonment of the sheep culture in that country, and vast numbers of sheep have been already exterminated. The London Times has an elaborate article on the subject, calling upon the government to take measures for averting the further destruction of sheep in Australia. The prospects offered by the mines cause the shepherds to abandon their business, which is very poorly paid, as an Australian shepherd gets less than \$100 per annum for his services. It is proposed to raise their wages to keep them from running to the mines.

Another English journal, speaking of the abandon-

ment of the flocks in Australia by the shepherds, says: "Immense flocks, left by the shepherds to be devoured by wild dogs, are being killed by thousands and boiled down for tallow. Many proprietors, it is stated, have been compelled to dispose of 20,000 sheep in this way. As wool has hitherto been the great staple of the colony, the main reliance of the majority of settlers, and an article on which merchants have been accustomed to make large advances, there are not wanting writers who draw gloomy pictures of the ruin which will, in their judgment, follow the infraction of the ordinary course of affairs."

* That this will not be soon, needs no prophet to tell.

V. What are the most profitable breeds of sheep for the South?

This question is discussed at great length by Mr. Randall. He decides that the pure-blooded Merino is, all things considered, the best adapted to the South—it being a hardy breed, requiring no extra skill or experience for its management. Besides, the Merino makes a better cross than the Saxon with the common sheep of the South. Two or three proper Merino crosses with the common sheep of the South raises them to the rank of a first-rate wool-growing sheep, scarcely inferior to the full-blooded Merino. The Saxon makes an indifferent cross, shortening the wool without adding much to its thickness, and thus rendering the fleece lighter. The reverse of this is the result of a Merino cross.

As a guide in the selection of Merinos, Mr. Randall says: "The head should be well carried up, and in the ewe hornless. It would be better to have the ram also hornless. The face should be rather short, broad between the eyes, the nose pointed, and in the ewe fine and free from wrinkles. The eyes should be bright, moderately prominent, and gentle in expression. The neck should be straight, short, round, and stout, not sinking below the level of the back. The points of the shoulder should not be raised above the level of the back. The back to the hips should be straight, the portion immediately back of the shoulder-blades being full; the ribs well arched; the body large and capacious; the flank well let down; hind-quarters full and round, the flesh meeting well down between the thighs. The bosom should be broad and full; the legs short, well apart, and perpendicular when the sheep is standing. The skin should be loose, mellow, and of a delicate pink color. A colorless, tawny skin, indicates bad breeding."

Almost every species of sheep is to be found in the United States; but after a careful review of all their different qualities and adaptations to the South, as given by the most competent judges, we do not hesitate to say, that the Merinos are the best for crossing with our common sheep. We might add many pages in confirmation of this opinion.

The opinion has prevailed, that the raising of coarse wools is more profitable than the raising of fine; but the reverse we believe to be true. The greatest wool market is that of England, and her chief importations consist of fine wools. If we had fine wools to send to England, we could successfully compete with those countries which now send their fine wools there. England does not want coarse wools, for these she exports herself.

The more we reflect on the subject of sheep husbandry in the South, the more are we convinced of its immense importance here, as a profitable branch of rural economy. A little capital invested in this branch of business would yield a hundred per cent. profit, and that too with but little trouble.

All large planters could, with little additional expense, shear annually 1,000 sheep, and at the same time be improving their old lands. The subject is, at least, worthy of serious consideration.

SUGAR—CULTIVATION AND MANUFACTURE OF.—I yield to your request that I should give you the result of my studies on the cultivation and manufacture of sugar in this state. I do it the more cheerfully as I indulge a hope of eliciting communications from others on a subject so vitally interesting to Louisiana, and in this way that any errors into which I may fall from want of experience or defective information, will be pointed out and corrected. The subject is vast; volumes have been written upon it, and any survey, however general, must make my communication extend over more space than you may be able to accord it in your pages. If so, hesitate not to retrench any portion that you may deem less likely to afford interest and information.

To a person accustomed to regard the bountiful returns which nature yields to man's labor in the cultivation of other crops, no fact strikes with more surprize than the small comparative return obtained from the cane. The seed seldom yields more than fourfold, and hardly ever more than fivefold. The very smallest quantity of cane required for planting one hundred acres, is twenty acres of the finest cane; and if, as too frequently is practised, the smallest and poorest cane is saved for planting, it is necessary to put up thirty, forty, and sometimes even fifty acres of cane in order to plant one hundred acres. If, in the cultivation of the cane, like that of the grains, it were necessary to plant the entire field each year, the large portion of each crop required for seed would form a very serious drawback, and in some instances might even cause the abandonment of the culture. But fortunately the cane is not an annual plant. Each year fresh shoots spring from the stubble which remains after cutting the crop; the cane *ratoons*,* as it is termed. In the West Indies, where no frosts interfere with this natural reproduction, it is said that the cane ratoons sometimes for a period of eighteen or twenty years, although I am inclined to believe this an exaggeration, and that it is in general necessary to replant every ten or twelve years. In Louisiana, as a general rule, the fields are divided as near as may be into three equal parts, one of which is planted each year, so that in a plantation with six hundred acres of cane in cultivation, two hundred acres are plant cane, two hundred acres ratoons of the first year, and two hundred acres ratoons of the

* This word is said to be a corruption of the French word "*rejeton*," a shoot or sprout.

second year. After a field of cane has thus yielded three crops, it is usual to plow up the stubble and plant afresh; and if we take this as a general rule, and assume as an average that one acre of cane will suffice for planting four acres, it results that the yield of the seed is twelvefold, or in other words, that one-twelfth of each crop must be reserved for planting the next.

In giving an account of the cultivation, I shall commence by describing the process of laying by from each crop the seed for the next. Just before commencing the gathering of the crop, usually about the 1st of October, the planter selects the cane intended for seed. And here, if I may be allowed without presumption to say so, a general and fatal error prevails. Most planters have not the courage to *sacrifice*, as they term it, their best and finest cane for seed. Selecting the fields of the oldest ratoons, where the plant is sparsest and smallest, they act in direct opposition to those principles of nature which both theory and experience have established for guides in reproduction. In both the animal and vegetable systems all agree in the general maxim, that like will produce like. In sowing grain, in producing vegetables, in breeding animals, in the whole reproductive system of nature, it has been universally established as a rule, that a healthy and vigorous offspring can be expected only from parents of similar constitution; and in all cases where this principle has been acted on with perseverance, it has not only succeeded in preventing deterioration, but in superinducing progressive development. I cannot but believe that this practice of always selecting the poorest plants for seed, was one of the main reasons which caused the fine variety of cane called the *Creole* to degenerate to such an extent that in late years it has been almost entirely banished from our fields. In some instances the planters have pushed the "penny wise, pound foolish" system to such an extent as actually to reserve no cane for plant, but the tops; that is, the green upper joints which are cut from the plant when it is gathered for the mill, and which are not mature enough to afford sugar. I am the more emboldened in making these remarks, as an experiment has shown that in this respect cane is not an anomaly in the vegetable kingdom. A friend, who is an experienced and intelligent planter, with sufficient energy of mind to break through the trammels of routine, when in opposition to good sense and sound principle, thoroughly tested this plan of reserving tops for planting in a portion of his fields some years ago, and the result was a marked degeneration in the product.

The cane when cut for seed is preserved in *mattresses*—it is laid in the field in beds of about two feet in height, in layers, in such

a manner that the leaves of each layer overlap and cover the stalks of the preceding layer, and thus form a protection against the frost; the mattresses are also laid with their leaves toward the south, so that the north wind cannot lift them in its passage, nor penetrate under them. In selecting the plant, also, care should be taken to have in view, as much as possible, proximity to that part of the field which is to be replanted, and thus to avoid any unnecessary labor in carting the plants long distances when seed-time arrives.

Cane may be planted in Louisiana at any time between the first of October and the end of March—but if planted in the fall, care must be taken that the ground be thoroughly drained, otherwise the plant will freeze if the winter be severe, or rot if it be mild. Cane planted in the fall should be planted at least four inches deep to protect it from the frost. Few planters however, are able to plant before, or during the grinding season. This work is usually commenced immediately after the crop is taken off. The ground is prepared by the plow, and the cane planted in January, February, and March. Much diversity prevails in the mode of planting; formerly the cane was planted in rows, from three to five feet apart; but recently a very decided change is perceptible, and the cultivators have become convinced that a width of seven or eight feet between the rows, is as little space as ought ever to be left. When cane is planted in narrow rows, the effects of crowding the plant are not visible in the early part of the season, nor are they as pernicious in very dry seasons; but late in the year the narrow rows are found to be shaded the entire day, the access of sun and air is debarred, the cane does not ripen as well, nor are the stalks as heavy, and in fact all the evils attendant upon crowding too much vegetation in too small a space are clearly apparent.

The following mode of planting and cultivating the cane has been pursued for a number of years by the friend alluded to above, and has been attended with signal success. As soon as the ground has been prepared in January, the cane is planted in rows at a distance of eight feet. Three canes are laid in a row at a distance of four inches from each other; care is taken that the cane be so laid as to place the *eyes*, from which the plant is propagated, on each side of the cane;* if the cane is thrown into the row without regard to this point, many of them will be so placed that one series of the eyes will rest on the bottom, and the opposite series will be on top; the bottom eyes will thus come out later, the cane will

* The eyes of the cane grow on the joints, on opposite sides from top to bottom, and are not distributed around the cane.

be unequal in the rows, and will present to the eye a strikingly different appearance to that which is planted with the precaution of having the eyes on each side, so that nothing may obstruct the first efforts of the tender shoot in its struggles to reach light and air. The canes are laid straight in the row, the crooked stalks being cut when necessary, so as to make a straight line. The plants thus arranged in the rows are covered with finely pulverized earth to the depth of an inch, but care is taken after the plant is up to supply an additional depth of earth round the roots at a much earlier period than is usually done, because most planters cover their cane deeper in planting. The advantage of this light covering is to hasten the first vegetation, and force an early start, a matter vitally essential in a cultivation like that of the cane in Louisiana, which must be forced into maturity within a term several months shorter than that which it naturally requires. My limits forbid following minutely the whole process of cultivation through the year, there being but little difference in the subsequent management from that followed by most planters, except in one particular, which I shall now point out. When the cane is cut in the fall, a large portion of the produce of the soil remains on the field, as is well known, in the tops and leaves of the cane, the ripe portion of the stalk being alone conveyed to the mill. This is called the *trash*, and is placed on the stubble to assist in protecting from the frost that part of the cane which remains under ground, and from which the ratoons shoot up in the ensuing season. As soon in the spring as danger of frost is no longer apprehended, the trash is raked off the rows of stubble to allow access to the sun and air, and on nearly all plantations this trash, which is a useful and fertilizing manure, is burnt up, instead of being returned to the earth. One cause of the difficulty of making use of this trash as manure, was the narrowness of the space between the rows under the old system of planting, which left so little room as to make the operation of plowing in the trash difficult and laborious, but where the rows are eight feet apart, the task is easy. Independently of the considerations to which I shall presently advert, and which derive their force from the chemical constitution of the cane, it is difficult for a person who has not witnessed the results, to form an adequate idea of the improvement to a soil that is naturally at all stiff, or clayey, from the mere mechanical subdivision of its particles attendant on the decay of the large quantity of this trash left annually in the fields. This system was first put into operation on the plantation of which I am part owner, last year. The trash, on the first plowing of the ratoons, was covered

with the earth turned over from the furrow, which is run alongside of the stubble. At the second plowing, when it became necessary to turn up the entire space between the rows, the difference in the soil was so perceptible as to create strife among the negroes for the preference of plowing these rows, the subdivision of the soil, caused by the decay of the trash, rendering the work much lighter and easier than in others, where, from causes not worth detailing, we had been compelled to burn the trash. The advantages of this system are such that in lands which have been thus treated for a term of ten years without repose, I have been assured that the soil, far from deteriorating, is perceptibly improved in each successive year. The space between the rows not only reposes for three years, but is enriched by an annual increment of the best manure, and when it becomes necessary to re-plant, the cane is planted in the spaces thus fertilized, and the former rows then become intervening spaces to receive in their turn the benefits of this rich nutriment for the soil.

I referred, in support of the advantage derived from the plan of plowing in the trash, to the chemical constitution of the cane as established by organic analysis. Although I am satisfied, from reasons which I will give when I come to treat of the manufacture of sugar, that no accurate or satisfactory analysis of the sugar-cane has yet been made, or at least published, still the errors are not such as to affect the results in relation to cultivation.

Sugar-cane is composed of water, woody fibre, and soluble matter, or sugar. In round numbers, it may be stated that the proportions are 72 per cent. of water, 10 per cent. of woody fibre, and 18 per cent. of sugar. But sugar itself is shown by organic analysis to consist entirely of carbon and water, and woody fibre consists principally of the same elements combined with inorganic bases; so that the oxygen and hydrogen found in the sugar-cane in the state of water, or as constituent elements of the sugar and woody fibre, form about nine-tenths of its weight, and are entirely derived from the atmosphere and from water, thus abstracting nothing from the soil. But this is not all. Vegetable physiologists agree that a very large proportion of the carbon of plants is derived from the air through the action of leaves, which decomposes the carbonic acid of the atmosphere, and appropriates to the formation of the tissues of the plant the carbon contained in this acid. For the purposes of the present illustration, it may, therefore, be assumed that not more than about six per cent. of the growth of the cane is derived from the soil, and hence the fact that this crop can be cultivated on the same soil without exhausting it for a long series of years;

but it is certain that a system which is constantly abstracting *something* from the earth and never making to it any return, must by degrees impair, and eventually destroy the fertility of even the alluvial soil of lower Louisiana. Now, by plowing into the land each year the tops and leaves stripped from the stalks, not only is the soil improved by the mechanical subdivision of its particles above referred to, but it is kept in good tilth by having restored to it not only at least as much carbon as was abstracted from it,* but a large portion of the inorganic bases. And if to this the bagasse were added as a manure, we should never hear of a soil being worn out on a sugar plantation in Louisiana. I am aware that it was formerly doubted whether any of the carbon of plants was derived from the soil, but later researches have put this point at rest, and have shown that a large portion of this element is derived by plants from the carbonic acid evolved from vegetable substances during their decay in the soil, either by its inhalation into the roots, in an aeriform state, or by its first entering into solution into the water found in the soil, and being afterward absorbed in this form by the roots. The experiment of Sir Humphrey Davy on this point appears conclusive, that eminent chemist having shown that different plants and grasses grow much more luxuriantly when watered with solutions of sugar, than with common water, the two liquids differing in nothing but the presence of carbon in the former, and its absence in the latter.

Before closing these remarks on the cultivation of the cane, allow me to say something on a point in comparison with which all others sink into insignificance. In the closing lecture of a series delivered in New-Orleans by Professor B. Silliman, Jr., on Agricultural Chemistry, he observed, that if he were asked by what means the planter of Louisiana could, with certainty, add largely to the product of the soil, he would say, as Demosthenes said of action in its effects on eloquence : drainage, drainage, drainage. The present season has given to nine-tenths of our planters melancholy proof of the truth of this remark, and although the quantity of water which has fallen in this state the present year is altogether unprecedented,† yet it is well known that every few years we may expect what is called a wet season, the effects of which on each plantation in the state are in exact inverse proportion to the extent of its drainage. It is in such seasons that the most striking contrasts are shown between the results of

skillful and imperfect cultivation ; but it is a great error to suppose that drainage, thorough and perfect drainage, is without its influence in the driest season. In the alluvial soil of our Mississippi River, and the bayous leading out of it, exposed to the action of the water which filters through the banks, and which, in the spring of the year is rendered icy cold by the melting of the snows in the northern regions, from which it flows, it is impossible to overrate the importance of draining. The effect of this low temperature of the water which penetrates into our fields is so great, as perceptibly to retard the spring vegetation, unless means are taken to obviate its effects. In the recent experiments of planting cane in the parish of Rapides, it has been observed that the cane is earlier and more vigorous in its first vegetation, although in a more northern latitude, than it is even in our lower river parishes, the soil on the Red River being higher, and naturally drier than that on the banks of the Mississippi, and not being exposed to the same deleterious influence of the water percolating the banks of that stream. Now, this very serious injury to the crop is at once obviated by the digging of a deep ditch along the entire front of the field which intercepts the sipage water, and being connected with the drainage canals, carries off this water behind without allowing it to penetrate into the soil, and chill the roots of the plant. But independently of this point, which is peculiar to the plantations in lower Louisiana, the general results from a perfect system of drainage are so eminently useful and profitable, that you must allow me to make a brief abstract of some of them, taken from the admirable work quoted below.*

1st. It carries off all the stagnant water, and the excess of what falls in rain. 2d. It arrests the ascent of water from beneath by capillary action, freeing the subsoil from noxious substances, which, in undrained land, frequently impair the growth of deep-rooted plants. 3d. By keeping the soil porous, it allows the rain, instead of merely washing the surface, to penetrate through the particles of earth, thus carrying to the roots not only the elements of growth existing in the water itself, but dissolving those substances which enter into the composition of the plant, and which the roots are incapable of absorbing, except in a state of solution. 4th. The descent of the water through the pores of the earth is accompanied by a descent of fresh air to the roots, the water displacing the air which previously occupied the pores, and being followed as it runs through the ground by fresh air, which is so valuable in promoting a healthy growth of the crop. 5th. The soil gradually becomes looser and more friable : hard lumps of stiff clay disappear by

* Because the tops and leaves contain fully as much of the carbon derived from the air, as the stalks contained of the carbon derived from the soil.

† A rain-gauge, kept in New-Orleans, shows a fall of rain amounting to more than ten feet, from the first of December, 1845, to the first of September, 1846, a period of nine months.

* Johnson's Lectures on Agricultural Chemistry and Geology, p. 306.

degrees, crumble more freely, and offer less resistance to the plow. 6th. The coldness of the soil disappears, and this occurs to such an extent, that in the parish of Peterhead, in Aberdeenshire, it is stated as an actual result of extensive drainage during the last twenty years, that the crops mature from ten to fourteen days earlier than they formerly did. Who can estimate the value to a sugar-planter of such an addition to the time of the grinding season? 7th. It is equivalent to an actual deepening of the soil, the roots of plants being invariably arrested in their downward growth when they meet with stagnant water in the subsoil, which deleterious effect is at once removed by drainage, and new, wholesome, and abundant nourishment furnished to the roots, which nourishment would have remained forever dormant in the soil, if not rendered accessible by the drainage. 8th. It is a necessary preparation for the effectual application of manure or other means of improving the soil, the efficiency of which is but partially felt in undrained land.

To these advantages which are common to all crops, whether annual or perennial, must be added two of paramount importance in the cane crop in this state. The first is the security against loss by frost, which, as every planter knows, will frequently congeal and destroy the cane in damp places, when that part of the crop which is in the highest and driest land, will escape injury. The second is the preservation of the ratoons. I am thoroughly convinced that perfect drainage will create an entire change in our present system of planting, and enable us to preserve the ratoons for six or eight years, instead of two or three. The only reason for the greater duration of the ratoons in the West Indies is the higher temperature; the stubble there is never frozen. Now, in Louisiana, there rarely occurs a winter in which the ground would be frozen to a depth at all sufficient to injure the stubble, if the land were freed from moisture; but when the soil is saturated with water, which is a good conductor of heat, the caloric is radiated into the atmosphere, ice is formed, and the cane is thus imbedded as it were in a mass of frozen soil, whereby the eyes are destroyed and vegetation effectually prevented. Similar results follow even if the winter be mild, as many of the eyes must rot from long exposure to the water in a damp soil in the season during which vegetation is suspended. If by thorough drainage these effects could be avoided even to a partial extent, the gain would be very great, not only in diminishing the quantity of seed required for replanting, but in saving the labor of matrassing in the fall, and that required for preparing the ground and planting the seed in the spring.

Manufacture of the Sugar.—A sugar plantation is incomplete without its workshop;

that is, its sugar-house. The owner is manufacturer as well as agriculturist, and the manufacture is one of great delicacy and difficulty. Until within a very few years the process has been of the rudest and most primitive character. A partial extraction of the juice was effected by the simplest and most imperfect machinery: the juice, when extracted, was tempered with lime, which was added empirically, without measure or proportion, and with scarce any regard to the varying quality of the juice, and thus tempered was boiled in open kettles over a fire, until evaporation produced a sufficient concentration of the saccharine matter to admit of crystallization on cooling. The loss to the planter exceeds belief: the sugar-cane treated with care in the laboratory of the chemist yields eighteen per cent. of its weight in pure sugar, while in the rude process above described, its yield is scarcely five per cent. Such, until a few years ago, was the process *universally* used in the plantations of the West Indies and Louisiana, and such is now the process on very many estates, with occasional trifling improvements, none of which suffice to carry the yield beyond one-third of the real quantity of sugar in the cane. It is to the French chemists, who have of late years devoted all the resources of science to the improvement and perfection of this manufacture, that we are indebted for the vast strides which it has recently made. Their studies, however, have been principally directed to the extraction of sugar from the beet, and so successful have been their labors, that although the proportion of sugar in the beet juice is, generally speaking, only about eleven per cent., and although this juice is much more impure in its chemical constitution than that of the cane, the beet-sugar manufacturers of France obtain a per centage of sugar equivalent to that usually obtained from the juice of the cane. It is much to be regretted that the light shed by science on the composition of the cane is still so defective, nay, that the published works on the subject are calculated in some instances to mislead. M. Peligot is one of the most eminent of the French chemists, and his report on the constitution of the cane is generally cited as the first authority on the subject, yet it is impossible that some of his conclusions can be correct. It results from his analysis that the composition of the cane in its various states, conditions and *periods of growth* is almost identical; or, in other words, not only do the same elements combine to form the cane, whether the first shoot that issues from the ground, the ripe joint or the immature top, but that these elements are combined in the same proportions! The following table represents his view of the chemical composition of the cane, and its relative proportions of water, soluble matter, and woody fibre, at the several stages of its growth:

	Water	Soluble mat. (sugar)	Woody fibre
First shoots.....	73.4	17.2	8.9
Second, from original sprouts	71.7	17.8	10.5
Third, from second	71.6	16.4	12.
Fourth, from third	73.	16.8	10.2
Inferior part of the cane.....	73.7	15.5	10.8
Middle	72.6	16.5	10.9
Superior	72.8	15.5	11.7
Knotty	70.8	12.	17.2
Cane of eight months	73.9	18.2	7.9
Cane of ten months	72.3	18.5	9.2

It may be said, without presumption, that this analysis can by no possibility be correct, the daily experience of every planter being at war with the supposition that the same quantity of sugar exists in the unripe tops as in the lower joints of the cane. If their chemical composition were identical, the same treatment of the juice of the tops and of the ripe joints would not only produce the same quantity, but the same quality of sugar, and this is known not to be the fact. M. Hervy, another eminent chemist, declares, that cane-sugar is a primary secretion of the plant, and that it does not mature like the sugar of fruit from pulpy matter, but is contained alike in the old and new knots. This statement of M. Hervy is quoted without dissent by Professor R. S. McCulloch, in his report to Congress in February, 1845; but this able chemist has since been engaged himself in analyses of the cane in the island of Cuba, and in a conversation last spring, assured me that he felt satisfied this was a mistake. The result of this gentleman's labors will be laid before Congress at its ensuing session, and cannot fail to be of vast interest and importance to our planters.

But, however imperfect and erroneous may be the analyses already published, one fact appears to be now established by the concurrent testimony of numerous distinguished scientific writers, and this is, that the juice of the sugar-cane properly treated will yield nothing but pure crystalized sugar, and that the molasses, so far from being naturally an element of the juice, is in reality manufactured by our imperfect process. On this point the testimony of M. Boussingault is conclusive, for in citing the experiments of Peligot, Hervy, Dupuy and Casaseca, he says, "I have myself, oftener than once, seen the juice of the cane yield nothing but crystallizable sugar."

The first and almost insurmountable difficulty in obtaining from the cane all its sugar, results from the imperfection of the mills used to extract the juice. The cane contains ninety per cent. of juice, and ten per cent. of woody fibre, which is of a spongy consistence. The cane is crushed between cylindrical iron rollers, three in number, placed horizontally and moved by the steam-engine. The quantity of juice thus extracted rarely exceeds two-thirds of that contained in the cane; so that, from this cause alone, the planter loses

one-third of his crop, which remains in the bagasse. All efforts have hitherto proved fruitless to diminish this enormous loss. An experiment was made a year or two ago by Col. Maunsel White, on his plantation in the parish of Plaquemine, to extract a farther quantity of juice by subjecting the bagasse to a second pressure between two additional rollers, but mechanical difficulties presented themselves, which he was unable to overcome. During the present season another experiment will be made by Mr. P. M. Lapice, on his plantation in St. James, with rollers differently arranged, and sanguine hopes are entertained of success. In order, however, to obtain any considerable addition to the yield of juice, it will probably be necessary to overcome the absorbing power of the spongy matter of the bagasse, and force it to yield its contents of juice by some expedient similar to that recommended by M. Payen, and mentioned with approbation by Mr. Dumas, in his treatise on chemistry. These authors suggest, that a steam-pipe be led from the boilers to the bagasse rollers, passing along them just below their line of contact, and perforated with small holes. A cock fitted to this pipe would admit the steam while these rollers work, and this steam escaping through the small holes would moisten the bagasse sufficiently to aid very much the extraction of the juice. Experience alone can determine whether the water thus added to the juice would dilute it so much as to counterbalance the advantages derived from the increased quantity.

Two-thirds of the juice being thus extracted from the cane, its conversion into sugar is attended with farther loss. The juice, as it runs from the mill, is impure. It is impregnated with feculencies, with the dust and earth which have adhered to the cane when cut, with the coloring matter of the rind, much of which is pressed out by the rollers, and with fragments of the fibrous matter, both of the inner and outer part of the stalks; this latter containing inorganic bases, principally silicon. Before commencing the manufacture of the sugar, all careful planters take pains to purify the juice as far as possible by mechanical means. The juice runs into a vat divided into separate compartments, by one or more tissues of iron or copper wire, by which all the grosser impurities are arrested, and the juice thus cleansed is ready for the first operation, which is the defecation or clarification. According to the old system of manufacture in kettles, this defecation was effected by boiling the juice over an open fire, tempering it with lime in variable proportions, and skimming off the scum as it arose to the surface. The loss of juice, in this operation, is four or five per cent. The juice thus defecated was passed from one kettle to another (the num-

ber of kettles being generally four, but sometimes five, or even six) until it reached the last kettle, called the battery, in which it was finally concentrated, till the syrup attained a density of about forty-two degrees of Beaumé's saccharometer, at which point it was ladled out of the battery into large wooden vats, called coolers. It was retained in these coolers till its crystallization, generally about twenty-four hours, at the end of which time it was taken out and placed in hogsheads in the draining-room or purgery, over a cistern, into which the molasses fell as it drained through holes placed in the bottom of the hogshead. The sugar thus drained was generally ready for market in two or three weeks. I give but a very meagre and hasty outline of the process hitherto pursued, because it is familiar to nearly all your readers; and I shall require several pages in giving some of the details of late improvements. I will merely remark, that this system produces a sugar highly colored, containing a large quantity of molasses, say about fifty gallons to each thousand weight of sugar, and consumes a large quantity of fuel, amounting on an average to two cords and a half of wood per hogshead. This large quantity of molasses is produced, as above remarked, by the imperfection of the manufacturing process, as none exists naturally in the juice of the cane; and, as molasses rarely sells for more than one-third of the price of sugar per pound,¹ the loss suffered by the planter in this item is again very serious.

Such was the mode generally—nay, universally adopted in the manufacture of sugar, till within the last twelve or fifteen years, when an apparatus was introduced into the French colonies, the joint invention of Mr. Degrand and Messrs. Derosne and Cail. This apparatus is now generally called by the name of the latter gentlemen; that is, the Derosne and Cail apparatus. Subsequently, different modifications have been suggested, and particularly by Mr. N. Rillieux; and it is my design to point out, as succinctly as is consistent with clearness, the process of Messrs. Derosne and Cail, the modifications by Mr. Rillieux, to compare their advantages, and to explain their vast superiority over the old system. This sketch, however imperfect, must necessarily interest all of your readers who are engaged in the sugar culture; the more especially, as within the last three years a spirit of enterprise has been awakened, of which few, perhaps, are aware. There are now twenty-five or thirty plantations on which the manufacture by the kettles has been abandoned, and in nearly all of them the syrup is refined by the use of animal charcoal or bone-black, to which I shall presently refer. I subjoin a list of these

plantations, with some remarks, in the note below.*

In the new process of sugar making, the furnace used under the kettles is entirely dispensed with, and the evaporation and concentration of the juice are effected solely by steam. The new apparatus, therefore, requires a larger quantity of steam than is used merely for working the mill, but the additional quantity is much smaller than would be supposed, for the reasons which will be presently explained. It will be observed here, as a matter of no small moment, that but one fire is required during the whole grinding season; that this fire is under the boilers, which are almost always outside of the sugar-house; that the additional fuel required for one or two extra boilers, used in generating steam for the manufacture of the sugar, is much less than that required for boiling a set of kettles; and thus we have, at the very outset, two great advantages—the diminution of the fuel and absence of risk of fire, as none need enter into the sugar-house, which is kept thoroughly warmed by the heat of the different steam-pipes, and of the pans in which the sugar is made.

We will now take the juice as it flows from the mill, after passing through the wire cloth, and examine its treatment in detail, by the Derosne and Cail apparatus. It first flows into defecators, which are iron kettles with a double bottom, technically called a steam-jacket. The steam from the boilers is conducted by a pipe which is connected with this steam-jacket, and which is provided at the opening into the steam-jacket with a

* List of plantations in which the manufacture in the kettles has been abandoned in whole or in part.

1 Mr. Johnson,	12 Verloin Degruys
2 Mr. Osgood,	13 C. Zerinque,
3 Mr. Wilkinson,	14 L. Millaudon,
4 Maunsel White,	15 Chauvin and Levois,
5 Samuel Packwood,	16 J. B. Armant,
6 A. Lesseps,	17 Valcour Aime,
7 A. Gordon,	18 E. J. Forstall,
8 Robert and Jas. Urquhart.	19 P. M. Lapice.
9 Benjamin and Packwood,	20 Judge Butler,
	21 — Key.
	22 Letorey,
10 A. Lesseps' upper plant.	23 Lamiraut,
	24 Kittridge,
11 Thos. Morgan,	25 Lucien La Branche.

All of these changes have been made within three years, except Mr. Thomas Morgan and Mr. Valcour Aime, who have used forms to refine their sugar for many years. On nearly all these plantations bone black is used. Messrs. Johnson, Osgood, Wilkinson, Morgan, Armant, Aime, and Lapice use forms; Messrs. Aime, Armant and Lapice have complete refineries, with all the necessary apparatus. The only two apparatus on the Derosne and Cail plan are those of Mr. Aime and Mr. Lapice. Mr. Rillieux's apparatus is now used complete on eight plantations, viz.: Mr. Samuel Packwood's, two plantations, Mr. Lesseps, Benjamin and Packwood, V. Degruy, C. Zerinque, Chauvin and Levois, and J. B. Armant. All the other planters above named used vacuum pans for granulating their sugar, except Mr. Forstall, whose apparatus consists of a set of open pans, boiled by steam.

cock, by which steam can be admitted or shut off at will. In these defecators, the first operation of cleansing or defecating the juice takes place, and in them the lime is introduced. Different opinions exist, as to the proper time of introducing the lime, some mixing it with the juice when cold, and others preferring to await its rise to a temperature of about 150 degrees of Fahrenheit. I think the latter plan preferable, and believe it to be also quite essential not to introduce the lime without previous preparation. This is especially important, when our common oyster-shell lime, manufactured on plantations, is used, as it almost invariably is combined with a notable proportion of potash, which has a powerful effect in causing sugar to deliquesce. Impurities of a similar kind, but less abundant, are found in the Thomaston and Western lime, used by most planters. The nature of the action of lime on cane-juice is somewhat involved in obscurity. One effect, is to saturate a small quantity of acid, which is always found in cane-juice, but the quantity which is used with advantage in defecating far exceeds that which is required for destroying this slight acidity. Besides this effect, there is no doubt that the lime has a certain action, whether mechanical or chemical, is not fully known, upon the mucilaginous or gummy matters found in the juice, by virtue of which it causes those matters to unite in a thick scum on the surface of the juice when heated.

It has, unfortunately, been impossible hitherto to discover a fixed rule by which to regulate the proportion of lime required for a given quantity of juice, and indeed this proportion is necessarily variable, according to the quality of the juice, and the nature of the soil on which the cane is grown. Ripe juices, and juices the product of calcareous soils, require much less time than those which are extracted from unripe cane, or those produced on lands rich in animal or vegetable manures. In order to attain the proper proportion, and at the same time to avoid mixing with the cane-juice any of the impurities that occur in unslacked lime, Mr. Payen advises the following process, which recommends itself by its simplicity, and which I detail, because all agree that the defecation is the most important operation in the whole process of the manufacture. The lime should be slacked with care, and in quantities large enough to last for some weeks. It should be slacked by successive additions of warm water, and slowly stirred, so that the water may penetrate every part of it as equally as possible, and should be repeatedly washed, by allowing it to settle and pouring off the water from the top. The potash, or other impurities, will be dissolved and carried off by the water, and the lime remain pure. In

this state, if covered with water, it will remain for several weeks without being perceptibly injured by atmospheric action, and the whole mass will be of one quality. When used, it should be mixed with water, to an extent sufficient to make a milk of lime, marking 13 or 14 degrees of Beaumé's saccharometer. A fixed quality and density being thus obtained, it only remains to ascertain, by experiment, what proportion of this lime, thus prepared, is required for a gallon of juice, and Payen advises the following mode: Prepare six separate equal quantities of lime, say one pennyweight each; then heat a gallon of juice, and when it has reached 156° of Fahrenheit, add one portion of the lime, continue the heat till it almost reaches the boiling point, then withdraw from it a table-spoonful of the juice, and filter it through a small filter in a funnel: then add a second portion of lime, replace the juice on the fire, and repeat the same operation. Continue till you have added the six portions of lime, and have withdrawn six samples of the juice. Place the six samples in their regular order in small phials, and the *first* of them that shows the liquid to be of a clear amber color, contains the proper dose of lime. The subsequent phials, containing a larger quantity of lime, will, probably, show a clear liquid less highly colored, but in these there is an excess of lime which would give a grayish tint to the sugar, and it is an admitted principle, that the least quantity of lime that will serve the purpose of defecating, is the best. By this simple test the quantity of lime required will be readily shown; for instance, as there are twenty pennyweights to the ounce, if it be found that two pennyweights give the proper point to a gallon, we know that we require an ounce of the prepared milk of lime for each ten gallons of the juice—and instead of spoiling entire strikes, or batteries, by deficient or excessive doses of lime, the manufacturer would proceed in perfect confidence, as long as the quality of the cane-juice remained the same, and it would be easy to repeat the essay when a different quality of juice presented itself from a different part of the field. The juice thus tempered, remains in the defecator with the steam under it until it reaches the boiling point, for the purpose of ascertaining which a thermometer is hung with its bulb plunged in the juice. So soon as 211° of Fahrenheit are marked by the thermometer, the steam is shut off by turning the cock. On no account must the thermometer be allowed to pass 212°, which is the boiling point, because ebullition then commences, the effect of which is to break the scum that has formed on the surface, and, by stirring the juice, to mix the scum with it, and thus destroy the whole operation; at 211° or 212°, it will be

found that the impurities of the juice have arisen to the surface, forming a thick scum of considerable consistency. After shutting off the steam, a cock is opened under the bottom of the defecator and the juice is drawn off clear, the scum gradually sinking, and as soon as the juice ceases to flow clear, the cock is turned so as to arrest the flow into the juice-pipe, and open another orifice in a different pipe, which carries off the scum. The great superiority of this mode of defecation over that in the open kettles is palpable. The perfect control which the manufacturer has over the heat applied to the juice, enables him to arrest it at a given point, and thus prevent ebullition, which, in the open kettles, is constantly going on; the scums in the latter as they arise are only partially removed by the skimming paddles, and by the continual motion which the ebullition imparts to the fluid, some of the impurities become so mixed up with the juice as to make it impossible to separate them.

The juice thus defecated flows through a pipe placed under the defecator, and which carries it to the filters. The filters used in the Derosne and Cail apparatus are called the Dumont filters, that being the name of the inventor; and their use forms perhaps the greatest improvement in the manufacture of sugar that the present century has produced, not even excepting the vacuum pan of Howard. These filters are iron cisterns, nearly cylindrical; are six feet in height, five in diameter at the top, and four and a half at the bottom. They are filled nearly to the top with animal charcoal, or bone-black, in coarse grains about the size of cannon powder. This bone-black is the carbonaceous substance into which bones are converted by calcination in close vessels. It possesses the extraordinary property of appropriating to itself the coloring matter of nearly all fluids that are filtered through it, and so powerful is its agency in this respect, that in testing the qualities of some bone-black offered me for sale, a dark-colored claret was so completely discolored in a single filtration, through a depth of twelve inches of the black, as to be undistinguishable by the eye from the purest spring water. Another property possessed by this singular substance, is that of abstracting from syrup any excess of lime that may remain after the defecation, and in addition to these two inappreciable advantages in the manufacture of sugar, it increases the crystallization to an extent that is scarcely credible, amounting, according to some experiments, to eighteen or twenty per cent. The introduction of this powerful auxiliary has created a complete revolution in the process of manufacturing and refining the beet sugar in France, and the results in Louisiana must inevitably be the same. The only drawback to its use

was its cost, because, formerly, it was thrown away as soon as repeated filtrations had saturated the black with the coloring matter and impurities of the syrup to such an extent as to deprive it of its efficacy; but the discovery of a mode of renovating, or as it is technically termed, *revivifying* the bone-black, has obviated this difficulty, by enabling the manufacturer to use the same black for an indefinite length of time with but little loss in quantity or quality. The process of revivification is simple, and not expensive, but the length of this article prevents my describing it in detail. The cane-juice, in passing through the filters, is purified, brightened, and flows from a cock at the bottom, ready to undergo the next process, which is that of evaporating the water which it contains.

The evaporation is conducted by a very ingenious process, the invention of Mr. Degrand, and calculated particularly with a view to economize the quantity of cold water required to condense the exhaust steam from the vacuum pan, used to boil the syrup up to the crystallizing point, and which will be subsequently described. It is impossible to give an intelligible explanation of this part of the process without a plan of the condenser, but my object is to state the mode of manufacture, not the mechanism of the apparatus. With this view, it will suffice to state that the juice is made to fall over a steam-pipe, through which the exhaust steam from the vacuum pan returns to the boilers, and that a double effect is thus produced: the juice, by falling in a shower over the hot steam-pipes, is concentrated to 15 or 16 degrees of the saccharometer, instead of 8 or 9, and at the same time, serves to condense the exhaust steam, which is pumped back in the state of hot water into the boilers. The economy of fuel is here very great, as none of the heat of the steam which boils the vacuum pan is lost, all either serving to evaporate the juice or being returned to the boilers.

The cane-juice has now become a syrup of a density of 15 degrees, and is immediately conducted through a pipe into the vacuum pan, in which it is concentrated to a density of 28 degrees. From the vacuum pan it again passes over the filters, in order to effect a farther discoloration, and is collected into a reservoir, from which it is returned into the vacuum pan, where it is finally concentrated to the point of crystallization. This vacuum pan, its theory, its action on the syrup, and its advantages, are matters of very great interest to the planter and require some development. I must be excused, if, in explaining them, I am compelled to state a few familiar general principles of physical science in such a manner as to make the subject intelligible to those whose attention has never been directed to these matters.

It is known to all that if the heat be applied to water until the thermometer marks 212° , vapor will be formed, and the water will all pass off in steam if the heat be continued for a sufficient length of time. This is the evaporating point of water in the open air. It is equally well known that the atmosphere of our earth presses on all objects with a weight which is calculated to be equivalent to fifteen pounds per square inch of surface. The tendency of water to evaporate into steam is therefore repressed in the open air by a weight of fifteen pounds on every square inch of its surface, and it has been found that if this pressure be withdrawn, the water will evaporate at a much lower temperature than 212° , and the same principle applies to other liquids. If, therefore, an air-tight iron pan be made, and if a vacuum be formed in this pan by withdrawing the air by means of an air-pump, water introduced into this pan would boil at a temperature diminishing in proportion to the diminution of the pressure of the air. It is difficult to say what would be the lowest temperature at which it could be made to boil, because a perfect vacuum is not attainable by any means yet invented, but a vacuum can readily be produced by the air-pump, in which water would boil at a temperature of 120° . A vacuum pan for making sugar, then, is an iron vessel, now generally made cylindrical, air-tight, connected by a pipe with an air-pump worked by the steam-engine, whereby the air is withdrawn from the pan to an extent sufficient to diminish the pressure of the atmosphere so far as to enable us to boil the syrup at a temperature varying from 130 to 160 degrees, instead of 235 or 240 degrees, which is the boiling point of syrup in the open air when concentrated to the density of 42° or 43° of the saccharometer. The vacuum pan is heated by means of a steam-jacket or steam-pipes, or both, and it is the steam which has served for this purpose that in escaping passes into the condenser mentioned above, and serves to evaporate the cane-juice, and is then returned in the form of hot water to the boilers, to be again converted into steam, and renew the same round of service.

Such are the outlines of the system introduced into the manufacture of sugar by Messrs. Degrand and Derosne & Cail, and before treating of the reasons why the concentration to the granulating point, when effected in the vacuum pan, is a vast improvement over the boiling in the open air, it will be convenient in this connection to point out in what respect the apparatus of Mr. Rillieux differs from that of Derosne & Cail, and to compare the advantages of the two systems. In the Rillieux apparatus, the defecators, the filters, and the vacuum pan for granulating the sugar, after the concentration of the

syrup to twenty-eight degrees, are all borrowed from the Derosne & Cail apparatus. There may be some difference in mechanical details, but the principle and manner of working are substantially identical. But to Mr. Rillieux is justly due the credit of a very ingenious and admirably efficacious mode of evaporating the juice and supplying the caloric necessary for the granulating pan with very great economy of fuel. In cane-juice, at nine degrees of density, there are $83\frac{1}{2}$ per cent. of water, and at 28 degrees there are but $48\frac{1}{2}$ per cent. of water. In order, therefore, to concentrate the juice from 9 to 28 degrees, it is necessary to evaporate from the juice 35 per cent. of the water. Mr. Rillieux conceived the happy idea of making use of the steam that is evaporated from the juice itself in order to boil his pans, and the planter who is accustomed to see the enormous quantity of vapor that is carried off into the air through his steam chimney when he boils in the open kettles, can form some idea of the very great economy of fuel that must necessarily result from making this quantity of steam subservient to his use during the grinding season. Mr. Rillieux's apparatus effects this object. It consists, when made on a scale sufficiently large to make from twenty to twenty-five hogsheads of sugar per day, of four pans, all constructed so as to afford a vacuum. But the vacuum in the two first pans is not nearly as perfect as in the two last. The operation is conducted thus: The cane-juice, after having been once filtered, is introduced into the first pan, and this pan is boiled by the exhaust steam from the cylinder which works the mill, thus avoiding the necessity of abstracting any steam directly from the boilers. This first pan is so constructed that the steam which arises from the juice as it boils is conducted into the pipes that heat the second and fourth pans. In the first pan the quantity of steam that arises is quite sufficient for this purpose; but if, at any time, it be found that the fourth pan, in which the sugar is granulated, is not supplied with a sufficiency of steam from the first, a communication can be opened to the exhaust steam from the engine, which supplies any deficiency, and enables the sugar-maker to bring his battery to the striking point as rapidly as he may desire. The juice is brought up to fifteen or sixteen degrees in the first two pans, and the steam from the second pan is made to boil the third, in which the syrup is concentrated to twenty-eight degrees, when it is passed through the filters, and then conducted to the last pan, in which it is granulated.

I consider the Rillieux plan of evaporation decidedly superior to that of Messrs. Derosne & Cail in several important particulars; 1st, the juice is evaporated in a close pan, and is excluded from atmospheric ac-

tion; whereas, in the Derosne & Cail apparatus it is exposed to the open air in a state of minute subdivision as it falls in a cascade over the frame of pipes which form the condenser; 2d, it is much less liable to derangement than the frame of pipes, which frequently gives great trouble, and which, unless in perfect order, injures the juice by deepening its color wherever it remains on any part of the heated pipe long enough to be burnt; 3d, it economizes the steam which is created by evaporating the cane-juice, and which, in Derosne & Cail's apparatus, passes off into the open air through a steam chimney. Against all these advantages the Derosne & Cail offers but one which may be of value in the West Indies, on certain estates, but which is of no moment in Louisiana, that is, an economy of cold water.

I give here the conclusion to which I have arrived, after as careful and impartial an examination of the two systems as I am capable of; but if I am mistaken, the experience of the present winter will afford ample means of correcting the error. The apparatus of Mr. Rillieux has been erected in its largest size, and in connection with a refinery, on the plantation of Mr. J. B. Armant, of St. James Parish; and Mr. P. M. Lapice, of the same parish, has erected a magnificent sugar-house and refinery on the largest scale, with the apparatus of Derosne and Cail in its most improved form. I have every confidence that both these enterprising gentlemen will reap a rich return for their heavy investments in these improvements, and their experience will decide the question of superiority in point of efficacy and economy between the two systems. The only question will be one of degree, for that both will succeed is beyond doubt.

The sole remaining subject which it is my intention to examine, is the difference between the system of boiling in the open air and in the vacuum pan, as regards the quantity and quality of the sugar produced. To place this matter in its clearest light it is necessary to state certain conclusions which are the result of the researches and experiments of eminent chemists, who have devoted their time and labor to this subject. I have already mentioned that there is naturally no molasses in our sugar-cane, and that all the molasses which is produced in our sugar-houses is the result of imperfect manufacture. It is not hence to be inferred, however, that it would be possible to manufacture the sugar entirely without a residue of syrup or molasses. A syrup at 45° density contains 83 per cent. of sugar, and 17 per cent. of water, but if this syrup be allowed to cool in order to crystalize, it will part with only 50 per cent. of sugar in crystals, and the remaining 33 per cent. of sugar will be mixed with the 17 per cent. of water, the two to-

gether forming what is called the mother liquor, or mother of crystals. If this mother liquor, which now contains one-third of water, be again boiled so as to concentrate it to 45°, and again allowed to cool, the proportion of crystals will again be the same, and there will remain a mother liquor which it will be necessary to re-boil, so that the process might be continued indefinitely and there would still remain a sweet liquid containing a part of the sugar. However perfect the system of manufacture, therefore, a residue of molasses or syrup will always be obtained, and the great aim in this manufacture must therefore be, to reduce this residue as far as possible, or in other words, to extract from the juice as much crystalized sugar as possible, that being the most valuable product. Now it has been found that a *high temperature and long exposure to heat* are the two greatest obstacles to the crystallization of sugar—that in proportion as the temperature is increased the quantity of crystals will diminish; and farther, that in proportion to the length of time that heat is applied, will the crystallizing power diminish. Repeated experiments have placed these two principles beyond question. Those who are curious on this subject, will find a very interesting paper in the seventh volume of the Journal of the Franklin Institute, translated from Hochstetter, an eminent German chemist, and containing a series of experiments made on sugar with great care. It results from these experiments: 1st, that access of atmospheric air is not only a condition necessary to produce vinous fermentation, but also to effect the mucous fermentation in the expressed juice of the sugar-cane, and that when the air is excluded, no change takes place: 2d, that a pure solution of sugar is changed through the influence of atmospheric air at a common temperature, and the more readily the more numerous the surfaces are which bring them into contact, and that this process is considerably heightened when the solution of sugar contains nitrogenous substances, as in the juice of the sugar-cane. This is an important objection to the condenser of the Derosne and Cail apparatus; 3d, that heat is one of the most injurious agents during the process of manufacture.

A simple application of these principles will show the vast superiority in the manufacture by the vacuum pan. In the open kettles, the syrup is brought up to a temperature of 235° at least, before it is at the proper point for crystallizing. In the vacuum pan the temperature is only 150°. In the open kettles the juice, from its first leaving the mill till it is concentrated in the battery, is constantly exposed to the action of the atmosphere. In the Rillieux apparatus it is almost constantly excluded from this influence. Finally, when the sugar is made in

the vacuum pan, the simple turning of the steam-cock shuts off the heat at the instant the granulating point is obtained, and the whole contents of the pan are then discharged in a homogeneous state. In the open battery it is not possible to stop the fire when the proper point is attained, and during the whole time that the sugar boiler is occupied in discharging the battery, the syrup is becoming more and more heated, that which is on the edges of the surface next to the metal becomes burnt or caramelized, and is not only lost but imparts a deeper color to the rest of the syrup, and also aids largely in forming molasses, by preventing crystallization in that part of the syrup with which it becomes mixed.

The effect of the high temperature required in the open battery is such that it is almost impossible to re-boil the molasses which drains from the sugar, so as to obtain a second crystallized product in the manner above explained. As this molasses, when again put into the battery, would require to be a second time exposed to a temperature of 235° or 240°, the action of this extreme heat is such as to render the whole mass totally uncrystallizable; but in the vacuum pan the re-boiling of the syrups which drain from the

first sugars is a regular part of the daily work; and this re-boiling has been effected three times, with successful results of crystallized sugar each time. But the advantages of the vacuum pan do not end here, for it is an easy and simple matter, in using these pans, to give to the crystal or grain of the sugar any size required by the caprice of the consumer. Large and brilliant crystals, resembling sugar-candy rather than the sugar of commerce, can be obtained at will. The whole process is under the complete control of the manufacturer. The sugar may be made light and porous, or compact and heavy. None of this control is possible with an open fire, of which it is impracticable to regulate the heat at will.

It may not be uninteresting, in conclusion, to make some calculation of the pecuniary results from the introduction of this improved apparatus. I speak now of that of Mr. Rillieux, not being able to give as yet any results from the Derosne and Cail apparatus, which has not hitherto been fully tested in this state. Suppose a plantation to produce an average crop of five hundred hogsheads of sugar, a moderate estimate of the profits of the apparatus would comprise—

1st. An economy of one and a half cords of wood for each hogshead, 750 cords, at \$2 50.....	\$1,875 00
2d. An increased value of at least 1½ cents per pound, in the quality of sugar produced, equal to \$15 per hhd.....	7,500 00
3d. At least 25 per cent. additional sugar obtained from the molasses, say 125 hhds., at \$60.....	\$7,500 00
From which must be deducted the price that would have been obtained for the molasses—15,625 gallons, at 15 cents.....	2,343 75—5,156 25
	<u>\$14,531 25</u>

Making the enormous difference of \$14,531 25 in the annual revenue of the planter who makes an average crop of five hundred hogsheads. I am aware that this result is so startling as to provoke incredulity, yet I have purposely placed the lowest estimate possible in each item of the calculation. That there are some drawbacks is not to be denied. I consider it not to be at all practicable, or if so, highly imprudent to rely on slaves to work the apparatus. I think that the planter who determines to adopt the improvements should make up his mind to have in his employ at least two white persons to take charge of the apparatus during the grinding season, so as to have at least one white person at the pans on each watch. Sugar boilers accustomed to the labor and understanding the working of the vacuum pans, can be obtained without difficulty for from five to seven hundred dollars each during the grinding season, and will soon be obtained at a lower rate, as the demand for services will increase their number, and competition will reduce the price; for the labor is not severe, and lasts but seventy or eighty

days. The negroes, too, who are employed in the sugar-house, require some instructions in the different processes of defecation, filtration, revivification of the bone-black, &c., but all these matters are of trifling moment compared with the great results to be attained.

In concluding, may I not be allowed to congratulate your readers on the prospects of permanent prosperity in this the most important branch in our state industry, and largest source of state wealth. A fortunate concurrence of circumstances rendered harmless the reduction in the protective duty which had been levied in favor of this very extensive manufacture. The sudden and unexpected repeal by Great Britain of that provision in her laws which discriminated between sugar grown by slave labor and by free labor, has destroyed the barrier of prohibition which prevented the import into that country of the Cuba sugars; and the still farther prospective reduction in the English duties secures us against a competition which must have ruined two-thirds of our planters. The largely increased consump-

tion which must inevitably result in Great Britain from the reduction of prices consequent on the diminution of the duty, will suffice to absorb so great a portion of the Cuba crop as to leave to our state almost the exclusive supply of the home market. The extent to which the production of sugar can be carried in Louisiana is appreciated but by few; but those who reflect on the subject, and who feel an interest in all that concerns the prosperity of our state, foresee with exultation the day not far distant when boundless tracts, now covered by the primeval forest, shall teem with plenteous harvests of the cane; when nearly every plantation shall be a manufactory of refined sugar, supplying not only the wants of our own country, but forming a large item in our annual exports; when, in a word, the industry and enterprise of our population shall succeed in developing to their full extent the resources which a bounteous Providence has lavished on this favored land.—*J. P. Benjamin.*

SUGAR MANUFACTURE, ETC.—The chief object of inquiry abroad for any one interested in the agriculture of this state, is evidently the manufacture of sugar, and it was to this subject that my attention was particularly directed. No observer can fail to remark the great disparity which exists in the means for instruction and improvement which prevails between the manufacture of cane-sugar in this country and beet-sugar in France. Paris may fairly be considered as the great centre of the civilized world, as regards all subjects of scientific inquiry; and I am not aware that in any other country have the researches of men of science been so ardently and extensively directed to the practical application of the discoveries of the laboratory to the improvement of manufacturing industry. Those engaged in the manufacture of sugar have been peculiarly favored in this respect; and ever since the project of Napoleon for rendering France independent of the colonial production of sugar was first carried into operation, all the rewards of a powerful government, and all the honors to be attained in a community attaching the highest value to literary or scientific distinction, have been lavished on those whose researches and experiments have enabled the manufacturer to apply, on a large scale, those improvements in the different parts of the process which the chemist first essays in the careful experiments of his laboratory. The men who conduct their manufactories and refineries are, in very many instances, carefully educated with a view to this pursuit, and only enter into the practice of their art after being intimately acquainted with its theory in all its branches; with those principles of physics and mechanics which will enable them thoroughly to understand the working of the machinery employed, and with those discoveries of mo-

dern chemistry which can best enlighten them as to the real nature of the delicate and beautiful process by which a darkly-colored and impure fluid is converted into a crystalline product of snowy whiteness, sparkling grain, and perfect purity. The advantages possessed by such men, surrounded by all the means and appliances of advanced civilization, with ready reference on all subjects of doubt or difficulty to men of eminent scientific attainments, and with every facility for obtaining, at the cheapest rate, the supply or repair of machinery and material of every kind, over the indolent or ignorant colonial planter, or even over our own more intelligent agriculturists, are inappreciable. The practical result of these advantages has never been more apparent than within the last few years. The beet-sugar manufacturers, employing a raw juice, containing, chemically, only twelve per cent. of its weight in sugar, and so impure as to render the extraction of this small proportion a process requiring great care and skill, had obtained so marked a superiority over the colonial planter, who operates with cane-juice, which is comparatively pure, and contains more by one-half of saccharine matter, that the loud complaints of the latter extorted a legislative enactment avowedly intended to destroy the beet-sugar industry, and establishing a scale of duties deemed sufficient for effecting that object. The only consequence of this enactment, however, was to stimulate the ingenuity and enterprise of the European competitor to such an extent, that, by his superior skill and intelligence, new progress was made in his art, and in the last year the quantity of beet-sugar produced in France was equal to the whole amount of importation of colonial sugars, each being equal to about 150,000 hogshheads. We can scarcely conceive, accustomed as we are to the routine of our sugar-houses, how ardent is the spirit of inquiry, and how prompt the practical testing, of any scientific discovery bearing upon this subject. A striking proof of this will be found in the following fact: In the weekly accounts published of the sittings of the Academy of Sciences, in February, 1846, was a paper submitted by Mr. Mialte, in which he stated that, in the course of his researches, he had discovered that oxalate of alumina possessed the quality of neutralizing any excess of lime that might be used in defecation, and that by employing it the yellow color imparted to syrup by the use of lime would be prevented, and the syrup, being colorless, would crystallize into white sugar. In March, April, May and June, of the same year, there appeared in the "Moniteur Industriel," a semi-weekly publication, devoted almost exclusively to the manufacturing and agricultural interests, no less than four articles from sugar manufacturers and refiners, who had made experiments with this new agent on a small scale, and who, while they

certified to its efficacy, demonstrated by calculation that it was unsuited for practical purposes, because the cost of the oxalate, in the quantity required during the process, would be too great to render its use profitable.

I fear, gentlemen, that though much has lately been done amongst us in the way of improvement, we are still far in arrears, and that we shall still remain so, unless that noble spirit of emulation, which it is the object of your Association to cherish, shall prompt us to cease regarding our manufacture as a mere process of routine, to be acquired without previous careful study, and, especially, without endeavoring to obtain an acquaintance with, at least, those general elementary principles of chemistry, of which our sugar-houses show us the application on a large scale; but I trust the day is not far distant when our planters shall be able to speak as familiarly of acids and of alkalis and their secular properties, as they now do of the high or low pressure steam-engine, of the fly-wheel and the safety-valve; for it is assuredly not more important to understand the machinery for the extracting of the juice from the cane, than fully to comprehend the best modes for converting that juice into the marketable product—sugar.

The different stages of the manufacture of sugar, as practised in France, are, no doubt, familiar to most of you, and do not differ essentially from those used on the plantations in this state, which have lately been furnished with the apparatus of Derosne and Cail, and that of Rillieux. The whole process of the manufacture may fairly be divided into, 1st, The extraction of the juice from the beet or cane; 2d, The defecation or clarification, the object of which is not merely to cleanse the juice of all feculencies which may be mixed with it mechanically, such as the particles of the pith, the rind, and the wax, which become mingled with it in its passage through the mill, but also to separate from it the albuminous and gummy matters which are in solution in it, and the separation of which, whether in the form of a scum or precipitate, is a purely chemical process; 3d, The filtration; 4th, The evaporation; and 5th, The concentration of the syrup to the degree of density required for crystallization. Independently of information obtained abroad, I have recently received much instruction from two very valuable works, which you have not yet had an opportunity of perusing; and I have no doubt you will feel interested by a statement, although necessarily brief, of what I have gleaned on each of these heads. I will first state that the two works to which I refer are the *Sugar Planters' Manual*, by Dr. Evans,* published in London in 1847,

and of which a reprint is now in course of publication in this country; and the Report made to Congress at its last session by Professor R. S. McCulloh, containing investigations in relation to cane sugar made in Louisiana and Cuba; and I feel no hesitation in saying, that no gentleman who will peruse attentively these two works will fail in attaining all the really valuable knowledge on this subject that has been acquired up to the present day.

The first great object of the planter who is about to manufacture the crop which forms the whole return for the labors of the year, is, undoubtedly, to extract from the cane all the juice that it contains. Unfortunately, no means have yet been devised by which this end can be completely obtained, and the bagasse, as it leaves our best constructed mills, carries with it from one-third to one-fourth of the juice. However improbable it may appear, it is nevertheless certain, that the fluid contents of a cane forms from 88 to 90 per cent. in weight of the entire structure of the stem; and I have taken some pains to ascertain, during the present season, the yield of juice from our mills of ordinary construction. I found the yield from the three-roller mill, of average size, and run at a speed of 3 1-2 revolutions per minute, to be sixty-one per cent.; whilst from another, of very large size, of which the rollers were 5 1-2 feet in length, and 28 inches in diameter, and which was run at a speed of two and a half revolutions per minute, the yield was 66 per cent., the bagasse being delivered from the latter almost pulverized and apparently dry. These results are undoubtedly much more satisfactory than would have been afforded some years ago: still they show that, after all the care bestowed in raising our crops, from one-fourth to one-third of our produce is absolutely lost; and if we take what I believe a fair average of the yield of juice in sugars, that is, if we assume that one-tenth of the weight of the juice is the product in crystallized sugar, we find that we obtain only about 6 1-2 per cent. of the weight of the cane in sugar, whereas chemical analysis shows that it contains 18 per cent. One great cause of the diminished yield of juice from the cane, is undoubtedly the practice, too prevalent, of running our mills at too high a speed. Experiments made in Cuba demonstrate that, with the same mill, and its rollers set in the same way, the juice obtained constituted 45 per cent. of the weight of the cane when the rollers made six revolutions per minute, and 70 per cent. when the speed was reduced to two and a half revolutions per minute, showing the enormous difference of twenty-five per cent.

The very spongy consistency of the pith of the cane presents an obstacle to the extraction of all its juice by compression that is apparently insurmountable, and the very inter-

* This valuable work was analyzed and examined in the numbers of our Review for October and November, 1847.—ED.

esting inquiry at once suggests itself, are there no other means by which *all* the fluid contents of the cane can be obtained? That this can be done, on a small scale, in the laboratory, is well known, but the difficulty is to effect the object on a large scale, and with the rapidity required on a plantation during the grinding season. A patent was taken out in England, not long since, by a Mr. Michiel for extracting the sugar from the cane by an entirely new process, thus described and commented on in the *Sugar Planters' Manual*:

"It consists in cutting the canes into extremely thin slices, and then submitting them to the action of a mixture of lime and water, which, it is presumed, will coagulate, and render insoluble the whole of their nitrogenized constituents, thus permitting the extraction of the whole of the sugar, with the soluble salts, by means of water.

"Were this process as practicable as its admirers seem to think, it ought, unquestionably, to be universally adopted; for I believe, were it *skilfully carried out*, almost the whole of the saccharine matter in the cane would, to a certainty, be extracted. It remains to be seen, however, whether it is really so practicable, or whether its application would be sufficiently cheap. I much fear that the circular knives by which the canes are to be sliced, if we may judge from what occurs in the slicing of the beet root, will be subject to continual derangement, and their edges blunted by the silicious coating of the cane. It may be doubted whether the operation will prove a sufficiently speedy one to admit of its adoption on large estates. The amount of evaporation demanded would also be great. This, it is true, may be obviated by placing the canes thus sliced in a succession of boxes having perforated bottoms, and placed one over the other in such a manner, that boiling water poured into the upper one will gradually percolate through each of the subsequent ones, and thus, by robbing the canes successively of the greater portion of their sugar, the saccharine liquid will gradually become more inspissated as it descends, until, when it comes away from the lowest box, it will have assumed the state of a syrup of considerable density.

"I offer the above remarks partly because I think that this system presents much that is admirable; nevertheless, like many others, it requires the touchstone of experience."

This process of extracting the juice from the cane is termed maceration, and is also the subject of remark by Professor McCulloch. He found amongst the constituents of the cane two gummy matters, one of which is called by chemists pectin and the other albumen. Pectine is probably the most viscid substance in nature, and, consequently, the most formidable adversary to crystallization. The Professor teaches us that

maceration in hot water will fix the albumen in the cane, but that the pectin will flow out of it with the saccharine juice, and its separation from the juice then becomes extremely difficult if not impossible. Where, however, we macerate in cold water, the pectin remains in the cane, and albumen flows out with the juice, which is then very easily and perfectly defecated by heat, which coagulates the albumen, and causes it to rise in a scum to the surface of the juice. For these reasons he disapproves of maceration in hot water, and objects to that in cold water by reason of the increased quantity of fuel required for the evaporation.

Having thus stated the opinions of the very able writers on this subject, gentlemen, allow me to inform you that I have from reliable authority ascertained that the process of Michiel has actually been put in operation on a large scale in the Island of Martinique, and with great success, and has there caused a yield of from 11 to 12 per cent. of the weight of the cane in sugar, on estates which had previously produced but six and a half per cent. I have not learned whether the maceration is with hot or cold water, nor whether if with the former the sugar is deliquescent by reason of the presence of pectin in the juice. My object in stating these facts is to stimulate the ingenuity of those members of the association who have devoted their attention to the mechanical arts. It surely is a matter perfectly attainable by the proverbial ingenuity of the American mechanics, to devise such a slicing apparatus as shall receive from the carriers and cut the cane as fast as it is now received by the rollers that crush it; and as regards the loss of fuel in evaporation, a very simple arrangement would readily obviate that objection. If the water be raised to a level above that of the cisterns which receive the sliced cane a series of these cisterns may be placed side by side with pipes running from the top of each to the bottom of the next. The water would enter the first by a pipe running to its bottom from the reservoir, and as the level of the water in the reservoir would be higher than that in the cisterns the water rising through the first would overflow into the second, and from that to the others in the same manner. It would then flow out at a density fully equal to that of cane juice and probably much greater. The effect of such an arrangement would be not to mix water with the juice so as to dilute it, but to displace the juice by water in each successive cistern. The cisterns would of course require to be covered, and a *pese sirom* of *Beaume* might be inserted into the top of each, which would plunge in the fluid and indicate when the saccharine matter had become exhausted by gradually sinking to zero. It would not be difficult so to arrange

by cocks and connections with pipes that the water could run from the reservoir directly into any of the cisterns, and so that it should run out of that last filled with the fresh slices of cane. If an apparatus on this or similar principles could be carried into operation on a large scale, a scale sufficient to take off the crop of the most extensive plantations, its results would be enormous: the whole sugar crop of the state would be at once doubled, and the inventor would reap the richest rewards for the time, labor and talent expended in perfecting it.

On the next process in the manufacture, that of defecation, I have little to offer that is novel. I may, however, observe that a considerable quantity of an ingredient, of which the composition is a secret, has been imported into the state by our enterprising fellow-citizen, Alexander Gordon, Esq., and is now undergoing the test of experience on a large scale on his plantation. It is afforded at a cheap rate, and if it succeed in replacing the lime which imparts so obstinate a yellow tint to our syrups as its inventor feels confident that it will, another great step will have been made in our march of improvement towards the perfection of the manufacture.

The filtration of the syrup through bone-black, next claims our attention. The use of animal charcoal has exercised an influence on the manufacture of sugar during the present century inferior to that of no other discovery, not excepting even Howard's invention of the vacuum pan. The only objection suggested to its use, viz.: its cost, was obviated when Dumont showed by his filters that it was not necessary to employ it as a powder, which, when once used, ceased to have any value except as manure, and that if employed in grain its filtering and discoloring powers might be indefinitely prolonged by the process of revivification. Much talent and labor have been expended in devising the best means of economical and effective revivification, but I have heard of none so satisfactory as that by heated steam, which I saw employed on a very large scale at two refineries near Paris. The black is thrown into a heap after being used and allowed to ferment; it is then thrown into a cylinder, and steam heated to 750° F., is driven through it. The steam is heated by being conveyed through pipes, placed in a furnace so arranged as to heat them red-hot without the actual contact of the fire, which would otherwise soon destroy them, nor is this process at all attended with the danger which might be supposed to result from the great degree of heat imparted to the steam. The action on the bone-black is at once to destroy, by combination, all the organic matters absorbed into the pores of the charcoal during its use, and the purgation of all im-

purities. The black when taken from the cylinder is simply sifted, and is found then to be fully equal to new black, and one of the refiners stated that he considered it as constantly improving by this process. This mode of revivification is cheap, simple, and superior to any with which I am acquainted. The proper degree of heat in the tubes is very simply indicated by dropping on them a metallic alloy, which melts at 750° F. When the alloy begins to melt, the bone-black is discharged, and a fresh charge introduced into the cylinder.

Here is one drawback to the use of animal charcoal, which I never have seen mentioned in any treatise on sugar, but which deserves some attention. Bone-black absorbs out of its own weight of saccharine solutions a considerable quantity of sugar. In experiments in the laboratory, a weight of saccharine solution equal to the weight of the black in the filtering tubes must first be passed through the black and then laid aside, and the subsequently filtered liquid is submitted to chemical tests: for the first liquid that passes through has lost a part of its sugar by the absorption of the black, and contains from five to ten per cent. less sugar than when poured into the filter. One Dumont filter contains generally from 2,500 to 3,500 pounds of bone-black, and if one be filled afresh every day, as is usual in our sugar-houses, the loss of sugar from this cause becomes worthy of some consideration, and some of the gentlemen of the Association who use the bone-black filters may, perhaps, find leisure to make some accurate estimates on this subject by experiments on a large scale. I have not been able to do so myself, but shall take an early opportunity of satisfying my mind on the subject.

I shall now proceed to consider the subject of the concentration and crystallization of the syrup in connection with the mode of liquoring or refining the sugar by means of pneumatic boxes or *tigers*, as they are called. I am the more eager to address you on this part of the process, because justice to another requires it. In the report of Professor McCulloch will be found the following passage:

"Liquoring may be performed in pneumatic pans or *tigers*, but there is some difficulty experienced in the operation in consequence of obstruction, if it be urged very rapidly. If at first the syrup be allowed to act simply by its own gravity, then the filtration be gently accelerated by a feeble, partial vacuum, until it shall have drained freely; and finally, the air be drawn through the mass to remove syrup adhering to the crystals, I do not doubt that any difficulty will be experienced with pneumatic pans, especially if the operation be performed at a temperature of not less than 80° F.

"When I was in Louisiana, Messrs. Benjamin and Packwood had tried unsuccessfully to overcome the above-mentioned difficulty of obstruction; they have since succeeded entirely, and their present crop has been manufactured, with Rillieux's apparatus and pneumatic pans, into liquid sugar of perfect quality. A specimen of this sugar, presented to me by Messrs. Merrick and Towne, has been analyzed by me and found *chemically pure*. Its crystalline grain and snowy whiteness are also equal to those of the best double-refined sugar of our northern refineries. To Messrs. Benjamin and Packwood must, therefore, be awarded the merit of having first made directly, from a vegetable juice, sugar of absolute chemical purity, combined with perfection of crystal and color. This is indeed a proud triumph in the progress of the sugar industry. In the whole range of the chemical arts, I am not aware of another instance in which a perfect result is in like manner obtained immediately."

This is high praise, gentlemen, and comes from a high source, and I am, therefore, the more mortified in not being able to take my share of it. I believe it to be true, as stated by the Professor, that although the *tigers* had been successfully used in liquoring sugar already made, they never had been employed in receiving the liquid sugar as it runs from the battery, and converting it into crystals, until the experiment was made on the Beluchasse plantation, belonging to Mr. Packwood and myself: but the success of that experiment is to be attributed alone to my friend and partner, Theodore J. Packwood, and I have no hesitation in saying, that any man not possessed to the full degree of his indomitable perseverance, long experience, and intimate knowledge of the behavior of saccharine matter under all the influences of temperature and varieties of manipulation to which it can be subjected, would have abandoned the experiment in despair, as being utterly hopeless. It was only after weeks of severe toil and intense application, that there appeared any prospect of ultimate success, and more than three-fourths of the first crop made with the tigers had been taken off before they were worked with that steady precision which proved that they could as surely be relied on in the manufacture of sugar as the ordinary moulds of the refiner.

I have stated that I would treat of the concentration of the syrups and crystallization of the sugar in connection with the working of the tigers, because it is only in that connection that I can offer you any remarks not to be found in all the treatises on the subject. It was well remarked by your distinguished Vice-President, Judge Rost, in his interesting address, delivered to the association in

1845, that the vacuum pan has many decided advantages over all other concentrating vessels: that the sugar may be grained in the pan, and that the granulation is completely under the control of the operator, who may accelerate or retard it at pleasure; who may carry it so far that sugar will not run from the pan, and may so conduct it as to increase almost at will the size and hardness of the crystals. All this is true; and it is also true, as he has stated, that the tigers cannot be used for sugar boiled in any other manner than in the vacuum pan. Allow me, then, to explain to you in what manner the tigers are constructed, how the sugars are to be boiled for being worked in them, and the mode of conducting the operation afterwards.

The pneumatic pan or tiger is an oblong box divided into two parts. A convenient size has been found to be eight feet in length and four feet in width. The two parts of the tiger are divided by a frame covered with cloth, made of copper wire, which forms a false bottom; the lower half is of cast-iron and is about twelve inches in depth, with a slope from all sides towards the centre, at which point is a cock for draining off molasses from the sugar, which is poured into the upper part and which is drained through the sieve-like false bottom above alluded to. The upper part is about sixteen inches in depth: it is made of sheet iron or wood, with a ledge of about half an inch in width, running all round the inside at the line or junction with the lower half; this ledge serves as the support for the frame, which is also supported from beneath with a thin plank, set on edge, and running from end to end of the tiger: the lower part of this plank is scooped out in two or three places, so as to leave free passage for the drainage from all parts of the bottom to the cock at the centre. An opening in the false bottom is connected by a valve with a pipe running to the air-pump that is worked by the engine that drives the mill, and another small opening connects with a steam-pipe furnished with a cock by which the steam can be admitted, or shut off, at pleasure, and the use of which will be presently noticed.

The theory of the working of the tigers is seductive, from its exceeding simplicity. The pressure of the atmosphere being calculated at fifteen pounds to the square inch, if sugar be placed on the upper part of the tiger, and a vacuum created beneath the false bottom, by pumping out the air every square inch of the surface of the sugar is pressed in by a weight of fifteen pounds, which is sufficient to drive through the false bottom all that is liquid in the mass, and thus leave the pure crystals above, they being too large and too hard to be forced through the meshes of the wire. In practice, very great difficulties occurred: if the sugar was boiled *high*, as the

sugar makers term it, the syrup became so viscid as to adhere to the crystals, and the pressure of the atmosphere, instead of driving it through, had the effect of compressing the whole mass into one solid body, as hard as a loaf of refined sugar, and which could only be removed from the tiger by the aid of pick-axes and hatchets, requiring immense labor, and tearing to pieces the wire cloth, which is expensive. If the sugar was boiled *light*, as it is termed, nearly the whole battery would run through the false bottom, when the vacuum pan was discharged, and the operation thus conducted, would clearly be not profitable. It is, therefore, evident that the mode of boiling or crystallizing the sugar in the vacuum pan is the most essential point for consideration as regards the liquoring in the tigers, and that this process can only succeed by obtaining from the battery a mass, composed of firm and large crystals floating as it were in a light and fluid syrup. This object can only be attained by great art in the sugar-boiler, and the mode of so doing is an application of the principles of crystallization, which you will find stated with admirable clearness by Professor McCulloh, in his report. A description of the process would carry me too far, but I may state generally that the syrup is to be evaporated in successive portions, so that the crystals of each portion may form *nuclei*, which are successively enlarged at each fresh charge of syrup introduced into the pan: these successive charges of syrup are always small, and the fluidity of the mother-liquor of the crystals is preserved by the changes of temperature and density being kept moderate; whereas a rapid evaporation in mass of the syrup would be attended by a violent agitation, an absence of *nuclei* around which large crystals could form, and the result would be a small and confused grain totally unsuited for working in the tigers.

The sugar, when boiled to the proper point, flows from the pan into the tiger in a thick mass, composed of crystals floating in a fluid syrup, and being boiled at a low temperature, cools so rapidly that it frequently requires the assistance of the workmen to scrape it along the trough and accelerate its passage towards the tigers, unless the fall from the pan towards them is very precipitous. When received into the tigers it is allowed to cool for a few hours, during which time it has become thoroughly crystallized, the mother-liquor of crystallization has passed through the bottom, and the whole mass is then as well purged as sugars made in the open kettles are, after remaining a fortnight in the purgeries. The surface is then removed, and mixed with water, so as to form a thick paste, such as refiners call a *magma*, and is again spread on the top of the tiger, which is allowed to drain for three or four hours—at the end of that time it presents a color equal to the inferior grades of white

Havana sugar, but the crystal is larger and more beautiful. White syrup is then poured on it, and the air-pump is applied, which forces the syrup through: the syrup in its passage displaces the last pellicle of coloring matter that still adheres to the surface of the crystals, and leaves the sugar perfectly white: the action of the air-pump is continued for the purpose of drying the sugar in a measure, and at the end of twenty-four hours from the time when the battery was poured into the tiger, it is shoveled out in perfectly pure white crystals, and thrown on the floor of a room heated by steam-pipes, where the little remaining moisture is evaporated, and the sugar is then ready for market—the entire process, including the putting it into packages, requiring a period of less than forty-eight hours.

After the tigers have been used three or four times, the meshes in the false bottom become clogged by the small crystals that are forced into them, and the steam is then let under the false bottom, through the pipe before described; it melts these crystals, and with a brush, the workman in a few minutes has the bottom so cleaned as to be ready to receive a fresh battery. This pipe is also serviceable when through a mistake of the boiler the crystallization has been improperly conducted, and a crust forms in the bottom; the steam may be used to loosen it, and thus avoid injury to the wire cloth.

Notwithstanding the perfection of the results obtained by this mode of liquoring and drying sugar, gentlemen, it is not to be recommended for adoption by any one who is unable to give to it his personal superintendence, or to procure the services of an intelligent and attentive agent. It requires constant care and watchfulness, and any mistake in boiling the sugar, whether arising from ignorance or inattention, causes much trouble and labor. Sugar made from frosted or fermented canes, or from the unripe cane which is frequently cut from new ground, or from land freshly manured by a crop of peas, could scarcely be worked in them at all, and in all such cases we have found it more profitable to put the sugar into hogsheads, and allow it to drain in the purgery, in the usual mode. But when the cane-juice is pure and sound, and from ripe cane, I have seen nothing equal to the beauty and economy of the process, when conducted with skill and care.

There are several other subjects, gentlemen, connected with our pursuits, on which I had intended to touch, but I feel myself in danger of exceeding by far the limits usual on such occasions, and shall only advert to one more topic before closing this address.

The annual recurrence of early frosts for some time past, has occasioned much solicitude about the preservation of the cane, particularly in the higher latitude of the state, where the result of its cultivation has equaled

the most sanguine anticipations of the enterprising gentlemen who have undertaken it. Experience has not yet demonstrated whether the severity of the cold is such as to destroy the germs remaining in the stubble, and thus create the necessity for renewing the planting every year, which would indeed prove a most serious drawback. But such inquiry having been awakened on the subject of windrowing the cane, I have thought you would feel interested in a fact which has reference to the subject, and which occurred at my own residence. About one-fourth of an acre of plant-cane of the Creole variety was affected by the frost on the 20th November, 1846. The lower joints remained sound, but the upper part of the cane, about two-thirds in length of the entire stem, was sufficiently injured for all the eyes to be killed. The cane was in the garden, and was windrowed two days afterwards, and from causes not worth mentioning, remained in the windrow untouched till the beginning of April. It was then taken up, and to my great surprise, was still sweet and sound. The frozen eyes had dried up into a black dust, which filled the cavity where each eye had been formed, but the injury was there arrested, the remainder of the joint had not fermented, and there can be no question that the cane would have made good sugar. This is an isolated fact, and I give it only for what it is worth; but when we consider that the plant Creole cane is the most tender of all, and that its leaves form a much less perfect covering in the windrow than the broad leafy tops of the riband cane, there is certainly reason to believe, that if cane be always windrowed in the state above mentioned, (and the first frosts rarely affect it more,) there would be no danger of loss of crops, and the injury inflicted by the frost would be confined to the extra labor which the windrowing requires, and a somewhat diminished yield by means of the partial drying of the cane.—*J. P. Benjamin.*

SUGAR MANUFACTURE.—CRYSTALLIZATION OF SUGAR—CHEMICAL AND OTHER DOCTRINES OF SUGAR.

The work which we republish is from the pen of a distinguished English chemist, and is lately from the press, having not appeared in our country. The author, Dr. Scoffern, elaborates a new theory and process of sugar manufacture, which will be invaluable to our planters. No work has yet appeared on the subject possessing higher merit.

Dr. Scoffern's attention was turned to colonial sugar manufacture in 1847, and he acknowledges the labors of Dr. Evans in the same field. In his own language—"I could not believe that there should exist any necessity for the loss of two-thirds of any material in producing, combined with a host of impurities, the remaining third—so opposed did the notion appear to any analogous case—so inconsistent with chemical harmony. I have since given the subject my almost undivided attention, and to prosecute it with the greatest efficiency, I have spent the greater portion of the subsequent period in a refinery," etc.—*Ed.*

Inasmuch as the phenomenon of crystallization is intimately associated with the production of sugar in the mercantile form, it has been considered desirable to offer a slight outline of that branch of science.

As a preliminary to a proper appreciation of the operation of that force on which the formation of a crystal depends, it will be necessary to acquire a well-defined idea of the atomic and molecular constitution of matter.

Let it be assumed that matter, though immediately presented to our senses under the form of masses, is in reality but an aggregate of molecules; and that the latter are in their turn composed of particles of matter, which no human agency or law of nature, as nature now exists, can divide, and which, on account of this indivisibility, are called atoms.

The above-mentioned assumption is in accordance with all chemical testimony: not one valid experiment can be brought against it; so that the only proof necessary to establish the fact of the existence of these atoms is the direct visual proof of their existence—a proof which never can be attained, inasmuch as chemical experiment, of a kind to be universally assented to, has demonstrated that these atoms must be smaller than a certain determined bulk, in the contemplation of which the human intellect is lost. Thus it can be demonstrated by the *naked eye*, that an atom of lead must be smaller than the billionth of a cubic line, how much smaller no one can tell, smaller, for aught we know, than there is space on the earth's surface for numerals to record. Yet, despite this inconceivable minuteness of atoms, the science of chemistry has been equal to the task of discovering their relative weights, and in many cases their relative bulks; has been able to demonstrate that the atom of oxygen weighs eight times as much as the atom of hydrogen, yet is only half the size; that an atom of lead weighs 104 times as much as one of hydrogen; of silver, 110; and so on for every elementary body, and the greater number of compound ones, of which the earth and its inhabitants are composed. The *actual* weight and the *actual* size of these atoms, it is evident, must ever remain unknown, inasmuch as the means of measuring and weighing objects so inconceivably minute, involves an impossibility.

Much gratuitous difficulty has opposed itself to the contemplation of the atomic constitution of matter, by confounding two propositions, which are in themselves distinct—the proposition of the divisibility or non-divisibility of matter, with that of the divisibility or non-divisibility of space. To conceive space not to be infinitely divisible

is irrational; but to conceive that matter filling such space is not infinitely indivisible, does violence to no reasoning process whatever. For let it be granted that the matter filling such space is so hard and so coherent that no force now existent can cause its division or dismemberment—then we have an atom according to the definition, viz.: a body which cannot be divided. Thus we learn that the term atom has no reference whatever to the smallness of a particle, but merely to the fact of its indivisibility; inasmuch, however, as practice demonstrates that the quality of indivisibility is alone confined to particles of incomprehensible smallness, this latter quality is always associated with the term atom.

Henceforth, then, the reader will assume the existence of atoms, and of aggregates of atoms, termed molecules; these molecules tending to unite again, and form masses.

It will be unnecessary for me here minutely to discuss the nature of those forces on which the formation of masses by the union of molecules depends. Suffice it to state, that these molecules are not only impressed with tendencies to combine, but to combine according to certain fixed and unvarying laws; as is best evinced by consideration of the fact that, if the result of such combination be a solid, the latter has always a tendency to assume a definite geometrical form—to become, in fact, a crystal. Thus we may regard the crystalline condition the natural one of all solid bodies, and we may consider its absence due to the operation of some extraneous cause.

To illustrate the above proposition by immediate reference to sugar:—The smallest possible molecule of sugar is composed of $(C_{12} H_{10} O_{10}) + Aq$. What the form of such molecules may be, we cannot tell; but experiment demonstrates to us that, when several of them combine to form a mass, their tendency is not to effect a compound of indeterminate or irregular form, but one possessed of well-defined, geometric boundaries; constituting a form which, although subject to slight variations, is always referable to the geometric figure called an oblique rhombic prism. Hence sugar is said by chemists to belong to the oblique prismatic system.

It is highly important to observe, that, although sugar crystallizes in certain well-defined geometric shapes, all referable to the oblique prismatic system, and therefore invariable, yet the size of those crystals may be varied almost at the will of the operator; just as a bricklayer, with materials of the same form, may be conceived to build an oblique prism of any stated size. Nay, more, by a very easy modification of the treatment of two sugar solutions, both precisely equal in all respects, one shall be made to yield crystals, and the other a confused mass, de-

void of all crystalline form, and hence called by chemists amorphous. A slight consideration of the operation of cohesive affinity between molecules will explain all that seems difficult here; and, as the subject is somewhat recondite, perhaps an analogy from ordinary matters will not be devoid of value:—Suppose, then, a legion of soldiers standing in an ample space, and ordered by sudden word of command to form a square, it is clear that the element of time is necessary to the success of their evolution. Give them time enough, and the evolution will be made—the square will be formed. Give them less time, and the evolution will be incomplete; either no vestige of the square will be recognizable, or its formation will be imperfect. The former is the exact condition of the sugar solutions which have been exposed to slow evaporation; the latter, the condition of such as have been exposed to a more rapid system of evaporation; and these remarks are applicable to all instances of crystallization whatever.

Thus we see, that, theoretically speaking, the process of effecting the crystallization of sugar *should* be entirely under the operator's control; and practice has rigidly demonstrated the correctness of the theory. Hence the sugar producer has certain well-known indications to follow out, provided he desire to obtain his staple in the form of crystals. He should evaporate by the slowest temperature consistent with economy of time and fuel, and thus retain his concentrated syrup in a fluid state, by the application of heat, until the crystals shall have accreted to the size desired.

In actual practice, the sugar manufacturer is obliged to rely alone on the latter expedient, the process of slow evaporation being incompatible with the necessities of general commerce. The process would occupy too much time, and the result would necessarily be increased in price, without offering any adequate advantage. It would be in fact, *sugar candy*, a material which is made by the process of slow evaporation here indicated, and which only differs from lump sugar in possessing larger crystals.

The principal bodies which come under the definition of sugars, are—Sugar of the Cane, of the Grape, of Milk, and of Manna. They have respectively the following compositions:—

	Carbon	Hydrogen	Oxygen	Water
Cane-sugar.....	12.....	10.....	10.....	+ .1
Grape-sugar, or glucose.....	12.....	12.....	12.....	+ .2
Mannite.....	15.....	16.....	16.....	
Of milk.....	12.....	12.....	12.....	

Of these, the latter may be entirely dismissed from our consideration, and a few remarks will suffice for all but the first.

On Sugars—General Remarks.—Cane-sugar is the only one which involves commercial interests on a large scale; being alone that which is employed in any considerable amount as a sweetening agent. For although manufactories of grape-sugar do exist on the continent, with the object of producing the material for admixture with such wines as are naturally deficient in it, and thus furnishing the means of supplying alcoholic strength, yet the commercial interests involved are, comparatively speaking, small; and the clandestine manufacture of grape-sugar for the purpose of adulterating the West India staple, a manufacture which was extensively carried on in and near London, is without the precincts of any commercial speculation, in its true sense.

The sugar called Mannite is a mere chemical curiosity, and need not be farther adverted to in these pages, were it not for the circumstance that a portion of the juice of the cane is liable, under improper treatment, to be converted into this substance.

Sugar of milk is obtained, by a process unnecessary here to describe, from the whey of milk. Hence, in certain cheese-making localities, considerable portions of this substance are prepared. In some parts of Switzerland this is done, and the resulting sugar

of milk is employed as a sweetening agent.

On Sugars—Special Remarks.—Under the definition of sugar, the distinctive chemical characteristics of the substance have been so fully given, that nothing further in that respect need be stated here.

Henceforth I purpose devoting the term *Sugar* exclusively to sugar of the cane, appropriating the terms *Mannite* and *Glucose* to the sugar of manna and the sugar of grapes respectively.

Perhaps sugar, more than any other substance, has been mystified by a variety of appellatives. According to some it has been termed a salt: by others an essential salt; whilst the conventional modes of using the terms saccharine matter and crystalline matter, as applied to sugar, terms now legalized by act of Parliament, imply that sugars may possess the former matter without the latter, the two being distinctively indicated as capable of existing separately, and as constituting, when united, the substance *Sugar*.

It seems unnecessary to point out how totally irreconcilable is the commercial and legislative definition of sugar, when compared with the chemical one.

Perhaps, however, the following parallel statement will place the discrepancy adverted to before the reader in its most powerful light:

CHEMICAL DOCTRINE OF SUGAR.

Sugar is a compound of carbon, hydrogen, and oxygen, united in known, exact, and unvarying proportions.

Its taste is sweet; and inasmuch as taste depends on rapidity of solution in the mouth, and inasmuch as large crystals dissolve less rapidly than small ones, sugar imparts less sweetness for equal time in proportion as its crystals are large.

Size of a crystal is not defined by nature, but shape is defined. Sugars may be obtained in crystals of any size, may be even made to measure.

The reader will form his own conclusions as to the comparative rationality of the two varying statements concerning sugar. According to the chemical doctrine, all is lucid and precise; according to the other, sugar is a kind of organic anomaly.

If sugar be a compound of saccharine and crystalline matter, surely an inquirer would infer that either of these matters had been separately obtained, and would, with great justice, expect the sugar community to be able to state the composition, properties, and general nature of sugar, *after having been deprived of its saccharine matter*.

In selecting the purest specimen of a crystallizable body, chemists invariably seek for the largest and best developed crystal. Experience having proved that nature avoids admixture of impurities with the substance of a crystal, but extrudes them to the outside,

COMMERCIAL AND LEGISLATIVE DOCTRINE OF SUGAR.

Sugar is composed of { Saccharine matter.
Crystalline matter.

Sugar is not invariably alike, but different according to region, climate, or plant; may have more or less saccharine, more or less crystalline matter. Its smell, too, may vary; so may its taste, and also its color. Sugars may be weak or strong; beet-root sugar, for instance, is a weak sugar.

Weak sugars possess small grains, (i. e., small crystals.) Some weak sugars have large grains, (i. e., crystals:) these are weak, because they do not sweeten well.

where they form a mere mechanical coating. In conformity with this rule of proceeding, pure specimens of white sugar-candy have been the staple material of analytical researches, prosecuted with the result of demonstrating that the composition of sugar is $(C_{12} H_{10} O_{16}) + Aq.$; and here we must interpose a chemical theory relative to this composition and the reasoning on which it is based. It will be observed, that the eleven parts (atoms or equivalents) of hydrogen, and the eleven of oxygen, would, if combined, constitute eleven atoms or equivalents of water; hence the following question arises: Does this amount of hydrogen and oxygen, or any part of the same, exist in sugar as water or not? On this point chemists are agreed to consider that one part (equivalent or atom) of hydrogen, and one of oxygen, really do exist in the sugar-candy as water,

without which water, or some equivalent for it, the remaining elements $C_{12} H_{10} O_{10}$ could not exist in combination.

The rationale of this opinion is as follows: If sugar be brought in contact under favorable circumstances with certain bases—oxide of lead for instance—an equivalent of water is evolved, and the remaining elements of the sugar ($C_{12} H_{10} O_{10}$) combine with the oxide of lead. In this way the sugar, less one atom of water, may be shifted from one base to another, and its existence inferred. These bases, however, being separated, the $C_{12} H_{10} O_{10}$ immediately resolves itself into other forms of combination; that is to say, provided it have not the means of recombining with the necessary amount of water to form crystalline sugar. Thus water serves as a base, and hence is termed by chemists *basic water*.

Instead, therefore, of stating crystallized sugar to be composed of twelve atoms of carbon, eleven of hydrogen, and eleven of oxygen, or in chemical algebra, $C_{12} H_{11} O_{11}$, it is more usual for chemists to represent it as composed of twelve of carbon, ten of oxygen, ten of hydrogen, *plus one atom of basic water*: or, in chemical algebra, thus: $C_{12} H_{10} O_{10} + Aq$. These observations explain the meaning of the term *hypothetical*, in contradistinction to *practical* sugar. The former indicates crystallized sugar *minus one atom of water*, or ($C_{12} H_{11} O_{11}$)— $H O = C_{12} H_{10} O_{10}$, the compound which unites with bases. The latter, this compound plus one atom of water.

The non-chemical reader will save himself much trouble and error by remembering this explanation. Otherwise he might hereafter confound the *one atom* of combined water, with some indefinite quantity of that fluid, in an uncombined state, as constituting moisture.

Sugar has a sweet taste, but no smell. Its color is white. When crystallized, it is semi-transparent. It is brittle, and may be easily reduced to powder. Exposed to the atmosphere, it attracts a little water, but incurs no chemical change. Sugar is very soluble in water, which, at a temperature of 48° , dissolves its own weight of that substance.

With increase of temperature, the solvent power of water for sugar increases also; when nearly at the boiling point, it is capable of dissolving any quantity of sugar whatever.

On evaporating the water from a solution of sugar, the latter is obtained in the form of crystals, the primitive form of which is a four-sided prism, whose base is a rhomb. The crystals are usually four or six-sided prisms, terminated by two-sided and sometimes by three-sided summits.

Sugar, like other organic bodies, is very

delicately constituted, and the laws or forces which hold its elements in combination are overcome by the operation of numerous disturbing causes. The action of heat; that of the alkalies—i. e. of all *proper* alkalies, (the action of alkaloids on sugar has not been investigated,) of a considerable number of non-alkaline bases; and of most acids,—tend to the destruction of sugar, by causing its ultimate elements to fall into a number of new combinations, the major part of which are still but imperfectly known.

The following experiment of M. Soubeiran affords a remarkable illustration of the effects produced on sugar solutions by the agency of heat alone. This chemist, having dissolved a given quantity of sugar in a given quantity of water, applied heat to the solution for thirty-six hours. The apparatus was so constructed, that the water given off by evaporation was continually returned to the original solution; by which contrivance the latter was always composed of the same quantity of sugar or its derivatives, and the same quantity of water as when the experiment commenced. Gradually the solution acquired darkness of color, and, at the end of thirty-six hours, it had become black.

Hence this experiment teaches us that, even by the application of heat alone to sugar solutions, sugar is destroyed and treacle is formed.

Chemists have demonstrated that there scarcely exists a foreign body which, if admixed with sugar solutions, and the latter boiled, does not increase the rapidity of destruction. The alkalies, lithia, potash, soda, and ammonia, act with such energy, that a very inconsiderable portion of either, added to a boiling sugar solution, produces an immediate and visible destruction of a large amount of the latter substance. This destructive agency is also participated in by the alkaline earths, baryta, strontia, and lime. The latter agent is almost universally employed in the manufacture of sugar from cane-juice, and hence arises great destruction of material.

Acids, as a class, are equally injurious with alkalies to the constitution of sugar. Sulphuric and hydrochloric acids convert it rapidly into other compounds, several of which are as yet imperfectly investigated. It would appear, however, that the changes effected by these agents are,—first the conversion of sugar into glucose, then the change of the latter into a series of dark-colored bodies, many of them of an acid nature; amongst which are bodies termed glucic, melasinic, sacchumic, and sacchulmic acids, also sacchulmine, and sacchumine.

The action of nitric acid on sugar is peculiar; converting it into oxalic acid. There are certain acids, however, which, under no

circumstances that I have been able to recognize, are injurious to the constitution of sugar. Of these, the carbonic and sulphurous acids may be cited. The latter has long been known as a powerful anti-ferment; and, taking advantage of this property, I was enabled to obtain a specimen of cane-juice from the island of Barbadoes, in a state of such a complete conservation, that I extracted from it upwards of 20 per cent. of sugar.

Grape Sugar.—Synonyms, *sugar of fruit*—*uncrystallizable sugar* (improperly so called)—*glucose*:

The last synonym, i. e. glucose, is that by which grape-sugar will in future be designated throughout these pages.

Glucose, so called from *γλὺκός*, sweet, is that form of sugar, to the presence of which ripe grapes, plums, peaches—and, indeed, the greater number of fruits—owe their sweetness. Glucose, moreover, is the sweet principle of honey, and of malt; hence, it is to its presence that brewers' wort owes its lucious taste, from which liquid it may be procured. The readiest method of obtaining this variety of sugar in large quantities, is by boiling starch or lignin with water containing a minute portion of sulphuric acid. The best proportions for effecting this are—starch one part, water four parts, and of sulphuric acid 1-100th of the weight of the starch. The ebullition should be continued for thirty-six hours, the water being returned as fast as it evaporates. At the expiration of this time the conversion of the starch into sugar will be complete; lime now is to be added, which separates all the sulphuric acid in the form of sulphate of lime, and the remaining sugar may be obtained by evaporation.

In this operation none of the sulphuric acid used is appropriated by the starch, or enters into any form of combination, its effect being of the kind known to chemists as *catalytic*, or attributable to contact without combination.

This method of forming glucose artificially was accidentally discovered by the Russian chemist Kirchoff, during an attempt to convert sugar into gum. He set out with the idea of dissolving the starch merely in dilute sulphuric acid, but on continuing the boiling, he noticed the production of sugar.

If, instead of starch, cane sugar be used, a similar result is obtained. Cane sugar is also partially changed into glucose by heat alone; and still more rapidly by the united agency of heat and alkalies or alkaline earths.

Vogel demonstrated that no gas was eliminated during this transmutation; and Mr. Moore and De Saussure proved that the quantity of sulphuric used was not diminished in the process. Saussure, moreover,

ascertained that 100 parts of starch, when converted into sugar, became 110-14 parts. Hence he inferred, that glucose was merely a solid compound of starch and water, or, more correctly speaking, of the *elements* of starch and the *elements* of water.

Glucose was, a few years since, largely prepared in the neighborhood of London for the purpose of adulterating colonial sugar, the amylaceous material used in the process being potato farina, of which the chief part was imported from Ireland. It might have been still more economically made, by substituting certain kinds of saw-dust for starch.

Glucose, when quite pure, is nearly white, and crystallizes in little needles, radiating from a centre, offering, in the aggregate, the appearance of little tubercular masses.

Unlike cane sugar, glucose is soft and clammy to feel; it may also be distinguished from the former by certain chemical tests.*

Mannite.—Various species of the ash yield, when incisions are made into their bark, an exudation of glutinous feel and sweet taste. When its fluid portion has been evaporated by the sun, it finds its way into commerce under the name of manna.

The bulk of manna consists of a peculiar sugar, which chemists term mannite; and to obtain which from manna, the latter is digested with hot alcohol, which dissolves the mannite. On evaporating away the alcohol, mannite crystallizes in slender acicular tufts.

The consideration of mannite would not belong to this treatise, were it not for the circumstance of its occasional artificial production from solutions containing

* It will be seen, by reference to the formulæ given, that glucose is made up of elements of (practical) cane sugar, plus the elements of three equivalents of water; hence a rationale is obtained of the facility with which the latter is changed into the former. Indeed, this conversion into glucose, which sugar experiences from slightly disturbing causes, is the first of a long series of destructive readjustments of elements to which sugar is subjected. Any approach to the boiling temperature of a solution of sugar instantly converts a portion of the latter into glucose; a change which is usually expedited by the presence of foreign matters in general, and by none more powerfully than alkalies and alkaline earths. This fact leads to a just appreciation of the great loss incurred by the present mode of colonial sugar manufacture.

I know not why glucose should be termed by some authors uncrystallizable. It crystallizes with great facility in slender needles, diverging from a centre, forming in the aggregate little masses of nodular or granular appearance. It certainly does not form hard crystals, and in this respect, is very unlike cane-sugar. The term uncrystallizable sugar, as applied to it, is not only improper, but productive of confusion; that term having been applied by Proust, *Ann. de Chim.* lvii. 131, to a sugar supposed to be liquid under all circumstances and uncrystallizable by any means, to be associated with both sugar of cane and glucose, and accounting, as he thought, for the existence of molasses and treacle.

sugar of the cane. Thus Fourcroy and Vauquelin demonstrated the existence of mannite in the fermented juice of onions and melons—vegetables which naturally contain sugar of the cane—and, under certain conditions, hereafter to be detailed, a portion of sugar in juice of the cane is converted into the same substance. Lactic acid is also a result of the fermentation of sugar under certain circumstances; which seem to be these—the presence of nitrogenous bodies, and the due fermentive temperature. Liebig imagines that the formation of both mannite and lactic acid may be due to the deoxidizing effect of these nitrogenous matters. An examination of the formulæ of the bodies involved in the supposition bespeaks the probability of this view; as also do the circumstances under which saccharine liquids undergo the change; namely, whilst they are still *raw*, or unpurified from the foreign matters which are derived from their native sources. Thus the juices of the beet and the cane rapidly undergo the change adverted to, but solutions of sugar and water probably never. With the juice of the white beet—(*betula alba*)—the rapidity of the transformation has often been to me a matter of surprise.

History—Chronological and Natural—of the Sugar-Cane, and of Sugar—Agencies of Heat, Lime and Impurities.—In a practical treatise on the sugar manufacture, such as this is intended to be, any extended history, either chronological or natural, of the sugar-cane, and its crystalline product, would be out of place. On these subjects a few general remarks will suffice.

Of all eastern products, sugar appears to have been the latest known, out of the regions wherein it was produced. The chroniclers of ancient Egypt, Phœnicia, and India, make no mention of it; and it did not find its way into Arabia as a commercial article until the eleventh century: soon after which, some adventurous Venetian travelers achieved the introduction of sugar as a commercial article into their metropolis. In Venice the first refineries were established; and hence the name, long prevalent, *pains de Venise*, as referring to loaves of sugar.

Even as regards the sugar-cane, the testimony of ancient authors is exceedingly devoid of precision. The most ancient writer by whom we find the sugar-cane recorded is Theophrastus, (B. C., 321,) who, in his chapter on honey, states as follows:—"Οτι αἱ τοῦ μέλιτος γενέσεις τριτταί. Ἡ ἀπὸ τῶν ἀνθῶν καὶ ἐν οἷς ἄλλοις ἴσθιν ἡ γλυκύτης, ἄλλη δὲ ἐκ τοῦ αἵματος, ὅταν ἀναχυθῇ, ὑγρὸν ἀπὸ τοῦ ἡλίου συσπυθῇ πύση, γίνεσθαι δὲ τοῦτο μάλιστα ὑπὸ πυραμνῶν, ἄλλη δὲ ἐν τοῖς καλάμοις.*

* The generation of honey is threefold: the

first is from flowers or other things in which there is sweetness; the second from the air, which, when there are dews, is concocted by the heat of the sun, and falls, particularly in harvest time; the third sort is from canes or reeds."

Theophrastus, in another place,* mentions a sort of reed, or cane, growing in marshy localities in Egypt, and possessing sweet roots. The passage in question has been understood by some to refer to the sugar-cane; but there are many objections to the correctness of this assumption. The sugar-cane is not an aquatic plant, neither are its roots so sweet as its stem. Moreover, if it really had existed in Egypt, there were certainly those who would have chronicled the circumstance with more precision than we find in the above vague expression of Theophrastus.

If we are to rely upon the testimony of Strabo, in his history of India, written about the nineteenth year of the Christian era, Nearchus, the admiral of Alexander the Great, about 300 years before Christ, not only saw the sugar-cane in India, but was aware that a substance resembling honey (sugar) could be extracted from it. But, if the statement were true, the sugar-cane would seem to have remained very uncommon, and sugar still more so, seeing that Seneca and Lucan, who lived in the time of Nero, (A. D. 62,) adverted to the sugar-cane and to sugar in language so ambiguous and obscure—that some authorities have even doubted whether another plant and another substance might not have been intended. Seneca, in his 84th Epistle, has the following passage:—

"Aiant inveniri apud Indos, mel in harundinarum foliis, quod aut ros illius celi aut ipsius harundinis humor dulcis, et pignior gignat. In nostris quoque herbis, vim eandem, sed minus manifestam et notabilem, poni quam prosequatur et contrahat animal huic rei genium."

Lucan, treating of the Indians near the Ganges, writes:—

"Quique bibunt tenera dulces ab arundine succos."

After Seneca and Lucan, Pliny is the next author of repute who adverted to the sugar-cane. This was about the year 78, A. D. Subsequently to which period, and until the latter end of the dark ages, such little testimony, as can be found relative to the sugar-cane and sugar, is far too vague and unsatisfactory to merit attention.

To the crusades we probably are indebted for disseminating in Europe such a knowledge of the sugar-cane, and its crystallized product, as caused the speedy introduction of both into this quarter of the globe. The sturdy warriors of the cross, on their return to the west, began to desire many oriental luxuries for which they had acquired a taste. An oriental

* De Causis Plant., ed. Heinsii, 1613. p. 475.

* De Causis Plant., lib. vi. c. 16, ed. Heinsii.

commerce was speedily established, and Venice became the great emporium of the riches of the east:—Of these, sugar was one.

Between the twelfth and fifteenth centuries the sugar-cane was cultivated in Sicily, the south of Spain, and indeed in many other Mediterranean regions. In the south of France, also, the culture of this plant was tried, but without success the climate proving too uncertain, or too cold. In the Canary Isles, however, the cane culture was most productive, as was also the manufacture of sugar. These islands, in fact, continued to supply civilized Europe with the greater portion of her saccharine produce until the discovery of the West India Islands by the Spaniards, in 1492; and the maritime discovery of India by the Portuguese, opened newer and more congenial soils to the production of the tender crop.

Much controversy has existed on the question, whether the sugar-cane were, or were not, indigenous to the new world. At the present epoch it would be impossible to determine this point, so much has the subject been involved by lapse of time and incapacity of the earlier historians. Fortunately, the matter, so far as concerns practice, is of no importance whatsoever. Suffice it to know that the West India Islands, almost immediately subsequent to their discovery, began to supply civilized Europe with large quantities of sugar, and the less fertile fields of southern Europe soon fell into desuetude.

During a long series of years, the West India Islands produced sugar for the greater portion of the civilized world, and created large stores of wealth to the proprietors of their soil. At present, unfortunately, this condition of things exists no longer. The culture of the sugar-cane has now become extended over most tropical, and some temperate regions. To oriental nations, sugar—generally in its impure condition—is an article of daily food. The Chinese use it in profusion; so do the natives of Siam—a country which, perhaps better than any other, is adapted to the successful produce of the sugar-cane. Throughout the whole of India, sugar is not only a common food for man, but immense quantities of the impure varieties of produce, called *Jaggery*, are given to elephants.

The amount of sugar capable of being produced by scientific processes of manufacture, from the canes and the palm-tribe of India, may be so vastly increased, that it would be difficult to assign any limitation. The native processes of sugar extraction in India are so rude, and so destructive, that it may safely be asserted that 75 per cent. of the sugar existing in the juice operated upon is entirely destroyed in obtaining the remainder!

With regard to the natural history of the sugar-cane, very few remarks will suffice.

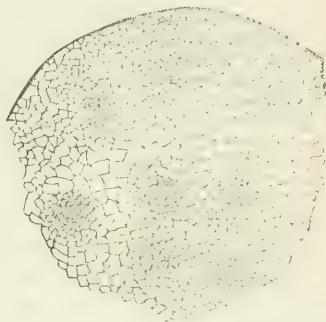
Botanists divide the vegetable world into phanerogamous or flowering, and cryptogamic

or flowerless plants. With the latter we have no concern.

Flowering plants are again divided into *exogenous plants*, or such as acquire increase of structure during growth by the deposition of external layers of tissue; and *endogenous plants*, or those which grow by depositions of tissue within the substance of their stem.

In temperate climes there are no large productions of the vegetable kingdom which belong to the endogenous class, all its representatives being of most humble growth. The grasses, for instance, are endogenous; and some of our larger grasses, as the wheat or barley, may be taken as the type of the endogenous vegetable produce in temperate regions.

It is in vain, however, to examine, in the stem of our humble grasses, for palpable indications of the endogenous mode of growth. For this purpose a section of some tropical endogen,—the bamboo, or sugar-cane, for example,—should be made. This section if carefully examined, will clearly indicate the prominent feature in the structure of an endogenous plant.



It will be seen there is no appearance of concentric rings, indicative each of a year's growth, but the whole cellular and vascular structure forms one confused mass.

For the purpose of fully appreciating the difference between an exogenous and an endogenous stem, the cane section may be compared with another of oak or hazel.



The difference between the two will be now marked; here the indications of peri-

pheral depositions of tissue are so clear, each deposition corresponding with one summer, that, by counting the number of existing rings, the age of the exogenous plant may frequently be told. Besides the difference of the mode of growth between endogenous and exogenous grasses, a difference on which are founded the distinctive terms of botanical arrangement, there exist others no less invariable, and well marked. All exogenous plants are provided with reticulated leaves, whilst the leaves of all endogenous plants are merely traversed by straight veins; this distinction will be well appreciated on making a comparison between an oak leaf and a leaf of barley or wheat.

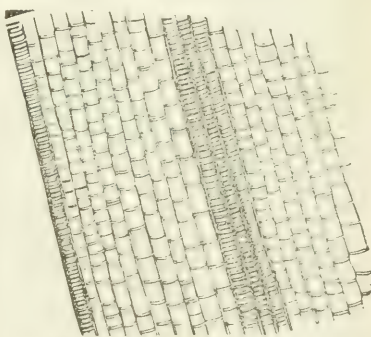
Again, all exogenous plants possess a well-defined bark, wood, and pith; whilst in endogenous plants no such defined arrangement exists;—one part merging into the other by insensible gradations. Other distinctions between endogenous and exogenous plants there are, but they belong exclusively to the province of the botanist. If the stem of any larger grasses be examined, it will be found incrustated with a hard brilliant coating. This is no less than silica or flint, as may easily be demonstrated by various means. If, for example, a straw be dexterously acted upon by the flame of a blow-pipe,—the silica fusing with the potash naturally existing in all land vegetables—there will result a beautifully transparent bead of glass. On a larger scale this production of glass from the same source is occasionally found amongst the debris of burnt hay or corn stacks. I have seen a lump of glass, produced in this way, and weighing several pounds.

The sugar-cane is—botanically considered—a gigantic grass; and the silicious covering so sparingly developed in grasses of the temperate zone, here acquires so palpable a thickness, that small portions of such can easily be chipped off, either from the sugar-cane or the bamboo.

A horizontal, or transverse section, of the stem of the sugar-cane, if examined under the microscope, is seen to consist of a series of hexagonal cells in close juxtaposition. They are formed of a delicate tissue, which incloses them on all sides, in such a manner that each cell is altogether separated from the others to which it is contiguous. This structure is called the cellular structure, and is intermixed with another structure called the vascular, by which the nourishment for the plant's support is absorbed and circulated. (See cut, p. 219.)

Although it has been said that endogenous plants possess no *defined* bark, and the sugar-cane is no exception to the rule, yet this plant has a kind of pellicle, or rind; not separable, it is true, from the trunk, but indicated by its greenish color, which depends on a portion of the general coloring matter of leaves, to which chemists apply the denomination *chlorophylle*.

The arrangement of vessels and cells already described, as observed in a transverse section of the cane, will be still more fully comprehended by reference to a longitudinal section, a diagram of which is annexed. By reference to this diagram, which represents a longitudinal section of the cane at the point where a knot is formed, it will be seen that, in addition to the cellular structure already described, there is another structure—the vascular. The use of the latter is to minister to the circulation of the plant; hence the vessels contain the crude sap of the cane, which may be assumed to resemble very nearly the sap of plants in general, and which is, therefore, a very complex fluid: a circumstance very necessary to be borne in mind, as will hereafter be recognized.



With respect to the hexagonal cells—microscopic experiments have demonstrated that they contain a fluid which is little else than pure sugar dissolved in pure water. The problems to be solved, therefore, are either to extract the matter of the cells alone, or to express all succulent matter from the canes, and afterwards to effect a separation between the sugar and its accompanying impurities. The first indication seems most philosophical, and it is one which a chemist in his laboratory would prefer to follow out. Taking advantage of the property which albuminous matters possess of coagulating on the application of heat, and remembering that such matters constitute the larger portion of the crude sap of the sugar-cane, the laboratory chemist would proceed by slicing his cane, drying the slices in a proper stove, and washing out the contained sugar by means of alcohol. Even without alcohol he could succeed in obtaining a good result, hot water being a menstruum scarcely less eligible for effecting the solution; for albumen, when coagulated by heat, is no longer soluble in water.

Thus, at a first glance, the problem appears solved, even as regards the large scale; but a slight analysis of facts soon demon-

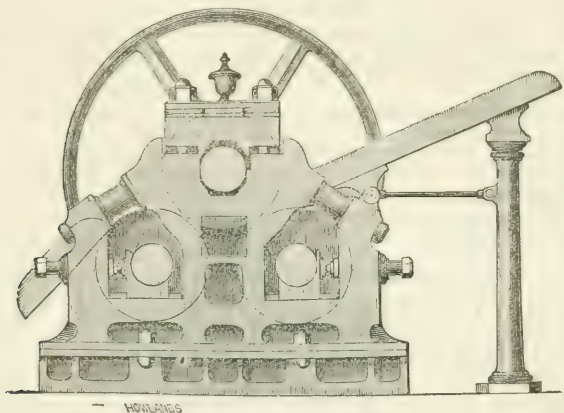
trates the contrary. The first difficulty is one that would scarcely be imagined *a priori*. It is difficult, if not impossible, to use any slicing machine that shall not very speedily become blunted by the hard silicious covering of the canes. Once blunted, the first object of the operation is lost; instead of a clean cut we have a bruise, and the saccharine cellular juice mingles with the sap: the grand objection to the usual squeezing of the mill obtains, without any of the mill's advantages. Then, how are sliced canes to be stove-dried in large quantities? Where is the necessary amount of hot water to come from? Where the fuel necessary to evaporate so dilute a solution as must result if the sugar be thoroughly washed out?

All these are practical questions, which

the planter would do well to answer to himself, before making arrangements for the carrying out of this very philosophical, but impracticable scheme.

Discarding the first of the two problems as incapable of a practical solution, the second presents itself to our consideration; but as a preliminary, a few words concerning the mill and its operation will be desirable.

The sugar-mill consists of a series of cylindrical rollers, usually three, between which the canes are pressed; the result of this operation is obviously to extrude not only the sugar—containing liquid in the hexagonal cells—but also the complex vegetable juice of the vascular tissue, and also a portion of wax, which is secreted by certain little glands on the periphery of the cane nodules.



Hence, cane-juice, or the fluid of expression, is a fluid of very complex nature; being made up of a great number of mineral salts, and of so many vegetable principles, that no perfectly trustworthy analysis of it is as yet recorded.

In a treatise which aims solely at being a guide to practice, it would savor of pedantry to expatiate on analyses which do not further the object to be kept in view. Without, therefore, entering minutely into the chemistry of cane-juice, it will be sufficient for all practical purposes to consider—first, that it is made of sugar, water, and impurities; and, secondly, that the prevailing or typical impurity is albumen.

Such is the fluid on which practical necessities oblige us to operate: and now, the second problem is fairly before us for solution—namely, to extract all succulent matter from the canes, and to effect a separation between the sugar and its accompanying impurities.

This separation must be effected beyond a

certain extent, or the sugar existing in the cane-juice obstinately refuses to crystallize on being evaporated; a circumstance not peculiar to sugar alone, but of almost universal occurrence in all parallel cases.

Thus, the juice of limes and lemons contains a large amount of citric acid; a body which, though easily crystallizable out of an aqueous solution, obstinately refuses to crystallize until a great part of its associated vegetable impurities is removed. The method of this removal I need not describe, as it does not in the least resemble any of the processes which will effect the purification of cane-juice. The object to be gained, however, in either case is identical.

Considering that the leading impurity in cane juice is albumen, and considering that albumen coagulates by heat—it might have been theoretically inferred, that a mere heating of the cane-juice to a temperature sufficiently elevated to coagulate the albumen, would have left the sugar in a solution of sufficient purity to admit of crystallization: experiments, however, have demonstrated

that such is not the fact, and have proved the necessity of adding to the juice some material endowed with a chemical potency of effecting a greater separation of impurities than is possible by heat alone. The usual agent employed for this purpose is lime—the mode of operation of which will be fully detailed hereafter.

We now arrive at a most important division of our subject; we have to examine closely into the changes which sugar is made to undergo by the combined agency of heat, impurities, and lime.

This will be best accomplished by leaving for a period the consideration of cane-juice, and by substituting for it a solution of pure sugar and pure water. This pure solution will be the starting point of all remarks on the more complex case, and will enable the following important agencies to be contemplated in detail; whereas in the actual colonial operation on cane-juice they operate simultaneously. We shall, therefore, have to study—

1. The changes effected on solutions of sugar in water by heat alone.
2. The changes effected on the same by the united agencies of heat and lime.
3. The changes effected on solutions of sugar, water, and impurities, by heat and lime, (the colonial operation.)

This important investigation will be approached with the greatest advantage by an examination of the phenomena attendant on the crystallization, from a menstruum of some body which is not capable of decomposition by the agency of heat.

For this purpose no substance is better than common nitre. If a portion of this substance, dissolved in water, were given to an operator with the object of evaporating away all the water of solution, and leaving the whole of the salt unchanged, this could easily be effected. The operator would simply have to apply heat to the solution, and the desired result would speedily be achieved. Whatever the amount of heat applied, no injury would occur to the salt, which would be found gradually incrusting the evaporating dish; and, by carrying on the process of evaporation to a sufficient extent, the whole of the nitre would be left dry. Under the circumstances, however, of rapid evaporation detailed, the salt would assume an imperfectly crystalline state; indeed, the chances are that no crystals would be visible.

Were the object to obtain the nitre in perfect crystals, the evaporation should be modified thus: The evaporation should be stopped short at a certain point, and the hot liquid allowed to cool—the result of which cooling would be the formation of well-defined crystals. A portion of the liquor of solution, however, would still remain uncrystallized,

until drawn off and subjected to a process of re-evaporation; when another crop of crystals would be formed, and another quantity of uncrystallized but crystallizable liquor would remain.

Upon the latter, the processes of reboiling and crystallizing might be repeated, until the total expenditure of the liquor of drainage; and with the result of obtaining literally the whole of the nitre employed—and crystallized, too—up to the period when the diminished amount of liquid to be evaporated and drained, furnished so small a mass, that the gradual cooling and perfect drainage, so essential to the production of good crystals, were conditions no longer under control.

The reader will have anticipated my coming remark, that this liquor of drainage stands in the same *mechanical* relation to nitre, that molasses does to sugar. Beyond this mechanical relation, however, the analogy ends—as will be presently made known. If, instead of nitre and water, a solution of pure sugar in pure water be taken, and treated according to the scheme just indicated, the results are as follow:

A portion of sugar crystallizes; but, instead of being white, as it was when dissolved, the crystals will have assumed a yellow tint, and the syrup of drainage will be more or less colored. If this syrup be collected and evaporated, there will result another produce of crystalline sugar still more yellow than the first, and the liquor of drainage from this second product will also have acquired a much darker color than its parallel in the first operation. Proceeding in this way, there is at length a period arrived at, when the liquor of drainage becomes a dark-colored viscid mass, incapable of crystallizing at all.

Thus, according to testimony of this experiment, it is impossible to extract, by the evaporative process (at least when heat is applied), the total amount of pure sugar dissolved in a quantity of pure water, a portion of such sugar being destroyed, and converted into a dark product.

If this operation had been conducted on a solution of sugar—not in pure water, but admixed with impurities of various kinds, such as coexist with the sugar in cane-juice; had the case been still more involved by the addition of a foreign agent, such as lime, the experimentalist might have imagined the destruction of sugar just indicated to be exclusively due to the agency of the collateral bodies: an explanation which is obviously inapplicable to the conditions just detailed. Indeed, the experiment of Professor Soubeiran, heretofore mentioned, sets all doubt at rest on this point.

The agency of heat alone being proved sufficient to effect a certain destruction upon a solution of pure sugar in water, it is an important point to determine the lowest amount

of heat which is thus injurious; and whether a process of evaporation can be devised, which shall not overstep that limit of temperature where the injury first commences.

In the laboratory, a chemist easily solves the problem; indeed, it involves a process which he very constantly applies to effect the evaporation or desiccation of many bodies, so delicate in their nature, that a slight artificial temperature would subject them to decomposition.

The chemist would proceed by taking advantage of the fact, that to produce evaporation the removal of atmospheric pressure is equivalent in effect to the application of artificial heat. He, therefore, would put under the receiver of an air-pump a shallow saucer, containing oil of vitriol, over which he would place, on a convenient support, a dish containing the sugar solution. A vacuum being now produced, the water of the solution would commence to be evolved as vapor; and this vapor would be immediately absorbed by the oil of vitriol. Thus, without any further working of the pump, a tendency to a vacuum would be kept up, until the sugar would have become dry, crystallized, and chemically unchanged.

I need not say that this process of evaporation is totally unadapted to any commercial case of sugar manufacture. A compromise, however, between two conditions, has been effected by the vacuum pan (an instrument hereafter to be described), which enables sugar solutions to be boiled in commercial quantities, under the joint circumstances of a partial vacuum, and a great diminution of temperature. The lowest practical temperature at which I have ever seen a vacuum pan worked is 135° ; a temperature which I would, therefore, consider the practical minimum, but which is sufficient to effect a certain amount of destruction on sugar solutions.

Having recognized the fact, that the lowest practicable degree of heat for effecting the evaporation of sugar solutions, is sufficient in itself to produce a certain amount of destruction—it now remains to be shown how much this amount of destruction is increased, by the concomitant agency of lime and impurities.

Proceeding in the demonstration systematically, I will assume a portion of white sugar to be dissolved in water, admixed with lime, and then boiled. If this operation be performed, the eye alone will recognize the fact, that a destructive process supervenes to a far greater extent than when a mere solution of sugar and water, without the addition of lime, was employed. Not only does the fluid become dark with increased rapidity, but it exhales a newly developed smell, indicative of some process of decomposition effected upon the sugar. If, moreover, the crystallization of the limed liquid be attempted, a further proof of destruction will

be manifest in the increased amount of non-crystallizable material, which leaks away from the crystallized mass.

These are but rough indications of the injury to which sugar is exposed when solutions containing it are heated in combination with lime—indications which are so visible to all who have seen the operation performed, that there exists not a sugar producer, so far as my experience goes, who does not fully recognize the powerfully destructive agency of this alkaline earth. Nay, in the absence of other testimony, the multitude of contrivances which have, from time to time, been introduced to public notice, with the express intention of either diminishing indefinitely the amount of lime to be used, or of reducing the quantity to some definite standard, would be ample evidence in support of the position, that lime is commonly recognized to be a most destructive agent on sugar.

The minute chemistry of the agency of lime on sugar solutions would be somewhat out of place here. So much of this agency as is necessary for the guidance of a practical sugar manufacturer has already been given in other parts of this treatise.

Having successively examined the agency of heat on a pure solution of sugar and water, and on the same with admixture of lime, we have next to investigate the complex changes which occur during the treatment by heat of sugar solutions mixed with vegetable impurities and lime.

That the cases selected may be consecutively demonstrative, I will suppose the experimentalist to contaminate a portion of pure sugar and water with some raw vegetable juice—that of raw parsnips, for example. Thus contaminated, the solution will be amenable to a new series of chemical decompositions of greatly increased complexity, of which the following are the most remarkable, and of greatest practical value, to be well understood and remembered.

The first great influence exerted on sugar solutions by the presence of raw vegetable juices generally, is that of causing various fermentations. Thus, although solutions of pure sugar in water may be allowed to remain exposed to temperatures most conducive to fermentation, for days, and even weeks, without any perceptible effect of this kind, yet the addition of very small quantities of these raw vegetable juices causes them, under the same circumstances, readily to assume fermentations accompanied by the destruction of sugar, and the formation of lactic acid, mannite, glucose, alcohol, acetic acid, and many other derivative bodies.

This factitious juice, made up of sugar, water, and the juice of raw parsnips, presents a very near analogy to the juice of beetroots, from which sugar may be extracted, and offers no very remote resemblance to sugar cane juice itself, many chemical pro-

perties of which liquids may be correctly studied on this factitious compound.

If a portion of this compound saccharine juice be evaporated with all care, and with the view of effecting its crystallization, the labor will be in vain. Until some of the impurities, at least, are separated, no crystallization will ensue.

If this factitious juice be a true practical representation of cane and other sugar-containing juices, it is quite evident, that the experiments cited have demonstrated the positive necessity of separating a considerable portion, at least, of the accompanying vegetable impurities, as a preliminary to obtaining the sugar in a crystalline form. Hence the following proposition is at once brought before us:—*Given, a mixed solution of sugar, water, and impurities—how, practically, to separate all but the sugar, with the least expense, and the least delay.*

This is the grand problem, upon the perfect solution of which, every advance towards perfection in the manufacture of sugar hinges.

As the usual agent employed in sugar-growing countries, for effecting this separation of impurities from raw sugar-containing juices is lime, employed in some manner or other, it will be proper, in this place, to examine its agency on the factitious juice.

If, then, a portion of the juice be admixed with a portion of lime (rubbed with water into the condition of cream, for convenience of employment), and then heated, the following changes will be seen to occur.

When the heat has been pushed to the extent of 180° Fahr., a black crust of impurities will be seen to have collected on the surface of the juice, from which it may be skimmed off, leaving the subnatant liquid comparatively clear and bright, but much deeper colored than it was originally.

If this fluid, thus freed from the scum thrown up by the agency of lime, be now evaporated down to the proper degree, crystallization will be effected; and substituting cane-juice for the factitious juice here assumed to have been employed, the reader will have had brought before his notice the exact conditions of sugar-boiling in the colonies.

Although in the preceding experiment the scum might have been removed from the juice treated with lime, so soon as the temperature arrived at 180° Fahr.; although the subnatant liquor might then appear to the eye perfectly clear and bright, yet it is not difficult to prove, by many different kinds of evidence, that this brightness or clearness of the liquor is a most fallacious sign of its purity. The first evidence to this effect is the very strong one, that fresh coats of scum continually arise as the evaporative process goes on, a result which never happens in solutions of pure sugar and water. A second testimony

to the same effect is afforded by the action of certain chemical tests, which are known to be endowed with the power of throwing down vegetable impurities. The acetates of lead are agents of this kind.

Thus far, the agency of lime has been demonstrated to be defective; but the worst has yet to be told. Even conceding, for the sake of argument, that there is a certain theoretical relation between a definite amount of vegetable impurities and the quantity of lime necessary for effecting its removal (which is not the case), still this relation would vary for almost every sample of juice; and no amount of care, or talent, or appliances, could accomplish this exact apportionment. The manufacturer would, therefore, even under this assumption—the one most favorable to the employment of lime—be continually obliged either to choose between adding too little of that agent, or too much; actual neutralization by apportionment being amongst the most difficult of laboratory operations, and one totally impracticable on a large scale. A few remarks will be necessary here, relative to the assertion, that no theoretical relation does exist between the quantity of lime and the quantity of impurities to be separated. It will be intelligible when we consider that the removal of impurities effected by lime is not one of *combination*, but one of *determination*, and hence is influenced by such varying conditions of heat, density, solution, and other circumstances, that to calculate the chemical resultant of so many conflicting forces would be an impossibility. On this point the following may be taken as a practical exemplification. If a pint of cane-juice, under the proper conditions of temperature, be treated with ten grains of lime, a scum will form; which, if separated by filtration, or otherwise, a clear, though high-colored, fluid will result. If this fluid be now examined for lime, considerable quantities of it will be discovered by the proper chemical tests for that alkaline earth; a fact which might lead to the inference, if not checked by other observations, that more lime had been employed than was absolutely necessary for the separation of the impurities present.

Nevertheless, it can be proved most unequivocally, by chemical tests, (the acetates of lead, for example,) that not merely a large amount, but the *greatest amount*, of the original impurities still remains. This testing operation demonstrates, that there is not even a theoretical relation between the amount of impurities present, and the amount of lime most proper to effect their separation; because the agency of lime is indirect, not direct—because it does not effect any separation by *combination*, but by *determination*. To place this matter in the strongest point of view, the following case may be cited:

If sixty-three parts by weight, exactly, of

ordinary crystallized oxalic acid,* were to be dissolved in water, and if it were required only to separate the oxalic acid absolutely by means of lime, without employing more than the amount required of the latter agent, the problem would be solved with the greatest ease. Every tyro in chemistry knows, that for effecting this separation, twenty-eight parts by weight, *exactly*, of lime, would be the proper quantity; which being added, a solid and insoluble combination of the lime and the oxalic acid would result—would deposit; and the remaining liquid would be water absolutely pure.

If the impurities which contaminate cane-juice, and other natural sugar-containing juices, assumed the tendency of forming a direct, invariable, and determinate power of combination with lime, an exact theoretical relation between the relative quantities of the two, necessary for effecting combination and separation, would exist; but as such theoretical relation is totally opposed to the actual conditions, the arguments founded upon the contrary assumption fall to the ground.

If we cursorily pass in review the experiments detailed in this chapter, with the object of eliciting from them their legitimate deduction, we shall be led to the following important facts:

That impure or crude sugar-containing juices refuse to crystallize, until a large portion of their accompanying impurities has been removed; that, moreover, such juices are very prone to undergo fermentation; hence the removal of such impurities is of the first importance; that lime will effect the removal of such an amount of the impurities as will admit of subsequent crystallization; that it is impossible to add lime in such a manner that some of this agent shall not remain. Hence, that even under the most favorable supposition—namely, that the use of lime has removed all impurities—(which is not the case)—still, the resulting liquor will not be sugar and water, but a mixture of sugar, water and lime.

But it has been demonstrated, that if a solution of sugar, water and lime be boiled together, the sugar is rapidly destroyed. Hence, it follows, that lime, when used as a purifying or defecating agent for crude sugar-containing juices, is, under any circumstances, a most destructive agent, and that some better agent is a desideratum.

* It is necessary to be precise in this expression. There are two substances known as crystallized oxalic acid, both of which are really combinations of oxalic acid with water. The ordinary crystallized oxalic acid is composed of one equivalent of real or dry oxalic acid, and three of water, and the other of one equivalent of real or dry acid, and one of water. Dry oxalic acid has never been obtained, although it may be caused to unite with certain bases, and thus be demonstrated to exist. In the experiment above cited, it exchanges its water for lime, with which it unites. The expression, dry crystallized oxalic acid, is absurd.

It will have been clearly indicated, moreover, that any rational attempt to limit the injurious agency of lime, will be in the direction, not of primarily apportioning the amount of lime to be used, but of separating, by some agent not injurious to sugar, all excess of the agent which may remain in the cleared or defecated liquor. This, so far as I am aware, is an impossibility.* Moreover, if there be question of separating any excess of defecating agent, the practical chemist will turn his attention to an agent of far greater efficacy, as a defecator, than lime—an agent which long since would have been employed in the sugar manufacture, if any means for separating it had been known.

In detailing the prominent effect of the agency of lime on sugar solutions, both pure and mixed, I have purposely avoided all chemical remarks as to the rationale of this agency, from the conviction that they would little avail the practical sugar producer. In point of fact, the agencies thus brought into play are so multifarious, so complex, or so ill understood, that even a full recapitulation of all that is known on the subject would be of but little use.

The general rationale of the agency of lime on pure solutions of sugar and water may be grasped by remembering—that sugar is a body of acid reaction; hence, that it readily combines with bases; that under the agency of lime and heat it readily yields glucose, which substance is also possessed of an acid quality. Finally, that glucose, under the prolonged action of lime and heat, rapidly changes into glucic, melasinic, sacchulmic and sacchumic acids, besides many other imperfectly known bodies.

The action of lime and heat on the impurities existing in sugar-containing juices, is referable to the property which albumen and several other organic bodies assume, of becoming to some degree insoluble, when they are exposed to incipient destruction.

Thus, all that can be stated on this point amounts to the simple expression of the fact, that lime determines the separation of a certain amount of the impurities existing in crude sugar solutions.

One important remark, however, relating to the use of lime as a defecatory agent, cannot be too strongly impressed upon the sugar grower. It is this—that whatever the rationale of the employment of lime, in the sugar-boiling operation on raw juices may be, it is certainly not that, as is frequently

* That is to say, in practice—on the small scale, and by the exercise of great care, lime may be separated with such exactitude, even by oxalic acid, that the sugar shall not be perceptibly injured. But a still better plan consists in the use of sulphurous acid, under circumstances which, having noticed in May, 1848, I caused to be printed in the summer of that year, and have subsequently taught in the laboratory.

stated, of neutralizing acidity. The term acidity is here to be understood in a general sense, as relating to such acids as the acetic and lactic. In strict chemical language, the term acid is extended even to sugar itself. Were there no greater necessity for using lime than this, it is clear that chalk would be a most efficient substitute; for whilst it would be equally potent with lime in neutralizing acidity, it could be employed in any quantity without fear of injury. The agency of lime on solutions of Muscovado, or other impure sugar and water, has purposely been omitted here, inasmuch as it will be discussed with the greatest propriety under the head of refining. It is well to remark, however, that there is no similarity between the kind of impurities existing in raw juices and those in colored sugars. The former chiefly consist of albuminous bodies natural to the juices; the latter of glucose, glucic, melasinic, sacchulmic and sacchumic acids, generated by the action of heat and lime on sugar.

Theoretic Indications to be followed out in the Extraction of Sugar from Raw Sugar-containing Juices; and Violation of these Indications, in the Present Process of Sugar Manufacture.—*The Vacuum Pan.*—A consideration of the deductions arrived at in the previous chapter, leaves no doubt existing as to the proper indications to be followed out, in the extraction of sugar from raw sugar-containing juices. I might have said, indication,—for every subsidiary matter tends to the one great end, of reducing the complex saccharine juice, with all possible haste, to the condition of a solution of sugar in water.

Although, in practice, the sugar producer will never attain this theoretical summit of perfection, yet he should always regard the various stages of his manufacture, from that assumed point of view; which, if never permitted to be varied,—never allowed to be overcast with vague doubts—each succeeding well-directed experimental effort will assuredly lead nearer and nearer to the truth. If once departed from, however—if once the sugar-extracting operation be viewed from other directions, though apparently nearer to the mark,—then the whole perspective of the theory is gone;—confusion takes the place of order, doubt of precision, fallacy of facts;—the reasoning process breaks down, and all attempts to emerge from the mental chaos are in vain.

The great aim to be kept in view during the process of sugar extraction, being the removal with all due haste of every thing, except sugar and water, the subsidiary indications are, to evaporate the latter at the lowest temperature, consistent with practical necessities—and to effect crystallization in accordance with the rules laid down before.

In carrying out the first or grand indication, it is evident that we should seek for some defecating or purifying agent which is either capable of being totally removed from the sugar solution; or which, if allowed to remain, should be productive of no injurious tendency.

The latter alternative, however, would be a mere compromise; as, by admitting it, we immediately violate, to some extent, the grand condition of procuring an unmixed solution of sugar and water.

Having thus sketched the theoretical indications which science proclaims as necessary to be carried out, in the manufacture of sugar from raw juices, I will now offer such a general summary of the method followed in the sugar-producing colonies, as shall enable the reader to appreciate the extent to which the above theoretical conditions are violated.

It must here be premised, that, although the plan of colonial sugar manufacture for all countries is essentially, up to a certain stage, identical, yet, when various colonies are compared as to the respective process of sugar extraction followed by each,—a casual observer might imagine the existence of distinctions as essential, which in reality are merely collateral; and which involve no difference of principle whatever. As it would be exceedingly inimical to exposition of principles, to break in upon the current of observation, for the purpose of announcing mere collateral discrepancies between the machinery, or the processes of different colonies—I will here observe that in describing the general operation of colonial sugar manufacture, in reference to the fulfilment or the violation of theoretic indications, I shall select, as typical of colonial operations in general, the process now usually followed in the West Indian islands.

Much has been written, and with great justice, on the very imperfect expression of juice from the canes by the process of mill crushing. Although experiments have demonstrated the sugar-cane to be made up of 90 per cent. on an average of juice, and 10 per cent. of woody fibre, it appears that the average amount of juice expressed by the mill is not more than 50 per cent.

The proper method of obviating this great loss of raw material is altogether a matter for the consideration of the engineer, and does not come within the sphere of chemical comment.

The juice as it comes from the mill is with as little delay as possible treated with lime, as follows, in order to effect a partial purification:—

The overseer* commences his operations

* "The man at the clarifier first raises by heat the cane-juice to a temperature of about 180°, at which time a dark scum forms at the top; he then

by putting into a series of wine-glasses some of the juice to be defecated.—He then adds to each in succession a portion of lime,—either previously mixed up with water or with syrup, to the consistence of gruel or thin pap. Immediately the contact is effected between the lime and the cane juice, a discoloration of the latter ensues; the amount of discoloration varying (*ceteris paribus*) in direct proportion to the quantity of lime employed. Having added a different quantity of lime agent to each of the glasses, the operator judges by the resulting tint, which result is the best, and he is guided accordingly by this evidence as to the quantity of lime he shall add to the general stock of juice to be defecated.

The amount of lime being determined, it is added to the juice in a copper, or an iron vessel, hung over a fire. Sometimes this vessel is the last of a range hung over one long flue; sometimes, on the contrary, it is heated by a separate fire. In either case its contents are heated to about the temperature of 180° Fahr., when a thick crust of impurities forms upon the surface of the liquid, and begins to crack. The fire is now damped, and the crust removed by skimming; occasionally,* however, the clear liquid is drawn off by a racking-cock from underneath. In order that the full defecating agency of lime shall be exerted, it is necessary to apply a greater heat than 180° Fahr.; the liquid, in fact, should be brought to the boiling point. Here, however, there is a difficulty:—immediately on the commencement of ebullition, the supernatant crust becomes broken into fragments, and mechanically incorporated with the fluid so intimately, that it can no longer be removed by skimming, but requires a filtration process to be had recourse to.

The process of clearing or defecation having been effected, and the crust separated by skimming, racking, or filtration, the process of boiling is commenced. A series of copper or iron pans, diminishing in size as they approach the fire-grate, and usually four or five in number, are hung over one common flue, or rather fire-place, in which the canes, after

their juice has been expressed, are burnt as fuel. This fuel generates a very powerful blast of flame, which not only plays under each of the series of pans, but may be even seen to escape from the chimney.

This plan of hanging many consecutive boiling pans over one common flue is in itself most improper. It was first introduced with special reference to a peculiar kind and limited amount of fuel at the operator's service, and would appear to be persisted in chiefly in deference to old opinions and customs.

The pans, too, are usually so deep* that great violence is done to the rule that the amount of evaporation, other things being equal, is in proportion to the extent of surface of the liquid to be evaporated.

The cane-juice having entered the first of these evaporating pans, the process of evaporation begins. At this stage, the juice is merely brought to a slight simmer, the heat applied being usually insufficient to cause it to boil rapidly. On the surface of this and every other pan in the series, a scum arises, which from time to time is removed by the process of skimming, and put aside for the purpose of yielding rum hereafter.

After the evaporation in the first pan of the series has proceeded to the desired extent, an attendant ladles its contents into the next—in which, and in every subsequent one, until the last two, the process of skimming is repeated.† Eventually the juice, (now a syrup,) is ladled into the teache, or last boiling pan, wherein it is at length brought to that degree of concentration judged most proper to admit of subsequent crystallization.

It would be impossible by mere description to convey an idea of the manifestations of the proper degree of boiling having been achieved. The peculiar sound which the syrup emits when dropped from the ladle into the general contents; the resistance it offers on being stirred; the peculiar appearance of its bubbles; all afford good indications to the practised boiler; but the evidence most generally followed is that which also the refiner avails himself of at home, namely, the proof of touch. A drop of the syrup being placed between the thumb and forefinger, and the two separated, a thread of syrup is formed, of varying length, and varying tenacity, according as the syrup has been more or less boiled. In this thread, also, crystals are occasionally seen, the presence of which affords valuable evidence.

throws into the heated juice a small portion of cream, or milk of lime. After waiting two or three minutes, until the scum again forms over the surface, he dips out a wine-glassful, and if he sees the mucilage form in well-defined flakes, and rise to the top, leaving a clear liquor of a pale amber, or Madeira wine color, he is satisfied; if not, he adds more lime; but if he finds that the mucilage will not coagulate thoroughly without such an amount of lime as would deepen the color naturally, he stops, and trusts to the skimming."—*Moody*. (a)

(a) This is the name of a gentleman from the West Indies, who examined Dr. Scofield's sheets, and remarked upon them.—*Ed.*

* "Almost always—I never saw the other done except with steam clarifiers in St. Croix, where they first take off the crust, then add lime afterwards, boil and skim in the clarifier."—*Moody*.

* "The arrangement of the fire and the size of the pans depend on the principle that the juice must simmer to allow of efficient skimming. If it boils, the skimmer cannot catch the scum."—*Moody*.

† "In the last two teaches the scum is brushed back into the preceding one, the liquor being too sweet to lose."—*Moody*.

In the process of vacuum-pan boiling, these crystals are the operator's surest guide.

From the last, in the series of evaporating pans, the *teache*, or *tayche*, as it is called, the inspissated juice is ladled into shallow wooden vessels, termed coolers; seldom more than eighteen inches deep; where it is allowed to accrete into a semi-crystalline mass.

These shallow coolers have been loudly and justly reprehended, as most inimical to the formation of crystalline sugar; and certain it is, that a chemist, if made to draw an inference from their appearance and necessary effect, without any collateral guide, would be constrained to infer, that in the West Indian sugar-manufacturing operation *perfect crystallization was a result to be avoided!*

In these shallow coolers the accreted mass is allowed to remain, until it has acquired sufficient consistency to admit of its being dug out, and carried away, in buckets, to the curing-house, without leaking entirely away. In this curing-house it is put into casks with perforated bottoms, each hole being loosely stopped by the stem of a plantain leaf; and through which the uncrystallized portions of the mass, at least in part, leak into the molasses tank.

This is the ordinary plan followed; but it is subjected to many modifications, in different places.

As might have been inferred from a consideration of the plan of curing the sugar just described, the badly crystallized mass yields up its non-crystallized portion with great difficulty. The process of curing or drainage occupies, in general, many weeks; and, even at the expiration of that long time, is so incomplete, that it is not unusual for some 20 per cent. of the weight of a hogshead of sugar to leak into the hold of the ship on its way to Europe, and to be pumped into the sea. In a recent case which came under my notice, 25 per cent had thus been lost, and the master of a trading vessel* informed Dr. Evans, as I am told by this gentleman, that his ship was often one and a half feet deeper in the water off Barbadoes than when arrived in the British Channel.

In order to expedite this process of curing, recourse is had on some estates to the expensive contrivance termed a pneumatic chest. This instrument consists of a chest of iron, or copper, supplied with a false bottom, either of finely perforated plate or cane wicker work; on which the sugar to be acted upon, for the purpose of drawing off its molasses, is put. Under this false bottom is a space which communicates with a powerful

air-pump; by the action of which, a partial vacuum can be produced, the tendency of which is to draw the more liquid portions of the mass through the false bottom.

The effect of such a contrivance as this, when made to act upon a badly crystallized sugar, need not be indicated. Not only are uncrystallized portions drawn into the reservoir, but also a large amount of the small ill-developed crystals.

A pneumatic chest, to be really useful, should be employed upon a well-crystallized sugar—a material which, as a general rule, drains perfectly well of itself, without any mechanical aid whatever.

The process of sugar manufacture here described is, as was previously remarked, the typical one of the West Indies; it has, however, been modified in various ways. Thus, as regards the boiling range, instead of pouring the juice from one pan to the next in order, by the process of dipping, the pans in some ranges have been furnished with valves, to admit of the passage of the fluid towards the *teache*. Ranges of this kind have been frequently heated by steam.

Several modifications (some, unquestionably, improvements) have been made on the *teache*, chiefly with the view of reducing the period during which the concentrated syrup is allowed to remain exposed to the agency of the fire. One of these modifications consists in an addition to the *teache*, of an internal hollow core exactly fitting it, and supplied at its under part with a valve, opening inwards. This core, technically called a "skipper," being dropped from a crane into the *teache*, the contents of the latter open the valve, and rushing at one gush into the core, may be removed bodily, by raising the core through the medium of the crane.

Another good modification of the *teache* has been introduced by the French into some of their colonies. It consists in altering the form of the *teache* into the shape of a coal-scuttle, the lip of which rests in such a manner on a pivot, that, at the proper time, the whole *teache* may be raised by leverage, and its contents poured out. This kind of *teache* is called a *bascule*.

Amongst the essential modifications which have been attempted from time to time on the colonial manufacture of sugar, with variable amounts of success, may be enumerated the following:

1. Filtration of the raw juice.
2. Filtration of the defecated juice.
 - a. Mechanical.
 - b. Chemical (through animal charcoal).
3. Improved methods of defecation.
4. The use of the vacuum pan.*

If the impurities which are so inimical to

* Captain Fowles—who estimated the loss from this cause at from 3s. 6d. to 4s. the cwt., or £3 6s. to £4 the ton.

* The processes of claying and liquoring, under whatever modification, are here purposely omitted,

the crystallization of sugar out of the crude juice, were merely of a mechanical nature, a process of mechanical filtration would be reasonable enough; but if those impurities be really of a chemical nature, then such mechanical filtration is entirely out of place. Accordingly, the process of preliminary filtration is spoken of with universal discontent by all who have tried it. Not only is it totally inefficacious in effecting the end desired, but it is productive of much positive harm. It has already been remarked, that raw vegetable sugar-containing juices are most susceptible of fermentation; hence the operation of filtration, even if productive of benefit in this stage, should, to be useful, be most rapidly conducted. Now this is impossible, for chemists very well know that raw vegetable juices in general, even although thin and limpid to the view, pass through filtering tissues most tardily. Add to this the amount of porous surface, moistened with fermentable liquid, exposed during the operation to atmospheric influences; and it will be readily understood that preliminary filtration is most fatal to the interest of the colonial sugar-maker. I would, by no means, extend this remark to a rough process of straining, at this stage, for the purpose of removing broken pieces of cane, fragments of leaves, and other mechanical impurities, which might somewhat inconvenience future operations. Such an operation, however, is not one of filtration, but of straining.

Should the process of mechanical filtration be executed after defecation? As a general rule, doubtless this question should be answered affirmatively, as being a step in the right direction; but so long as lime is used as a defecator, the process of filtration will be deprived of half its value. Not only is the flocculent scum developed by lime most unfavorable to the process of rapid filtration, but the advantage gained is more specious than real, inasmuch as so many impurities still remain in juices defecated by lime, that, although the act of filtration may have yielded a liquor of great brightness, it becomes turbid, and throws up more scum on the further application of heat.*

With regard to filtration through animal charcoal, it can never be profitably applied to the treatment of raw juices, or those that

have merely been exposed to the process of defecation, without subsequent concentration. It has been demonstrated, that this agent produces its maximum effect on sugar solutions of about the density of 28° Beaumé; hence, if employed at all, it should be at the interval between the last boiling-pan and the teache. Numerous experiments, however, have convinced me, that animal charcoal should never be employed in the colonies for the purpose of making any but absolutely white sugar. The beautiful straw-colored tinge, so admired by grocers, and which all sugars, by a proper system of defecation, can be made to assume, animal charcoal has a tendency to destroy—imparting a disagreeable neutral tint in its place.

The expense of using animal charcoal, too, in the West Indies, being somewhat about £2 per ton of sugar, is in itself a most serious obstacle to its general adoption.

The last essential improvement introduced into the colonial sugar manufacture is that of the vacuum pan, an instrument which merits a full description.

At the ordinary level of the sea the atmosphere exerts a pressure of 15 lbs. on every square inch; and, whilst exposed to this pressure, water boils at a temperature of 212° Fahr.*

If, however, by means of the air-pump or otherwise, a portion of the atmospheric pressure be removed from the water's surface, then the degree of heat necessary to effect ebullition is reduced—reduced, too, in a known and definite ratio, so that for every pound of atmospheric pressure taken off, a proportionate diminution of the boiling temperature is accomplished.

Not the most perfect vacuum which we are capable of forming, is sufficient to cause water to boil at ordinary atmospheric temperatures without the application of any extraneous heat, simply because water is not a fluid of sufficient volatility. If ether, however, which is a far more volatile liquid, be exposed to the same treatment, it boils with violence: water, under similar circumstances, would merely be rapidly given off in the form of vapor.

The rationale, and also the laboratory practice of increased evaporation under diminished pressure, has already been explained. It now remains to be stated, that the vacuum pan is merely an instrument which unites to the principle of evaporating under diminished pressure, the application of a certain—but comparatively small—amount of artificial heat.

To the honorable Mr. Howard we are indebted for the invention of this most useful

as not being improvements of the sugar manufacture—but merely an extension of that manufacture beyond the usual colonial limits, into the art of the refiner.

* "The sliminess which affects the bag filters is a great disadvantage to charcoal filters. I have known the charcoal frequently clogged; and, when washed with care and placed in open casks for collection for re-burning, ferment to such a degree as to char the casks, and reduce the value of the charcoal by a considerable production of white ash."—*Moody*.

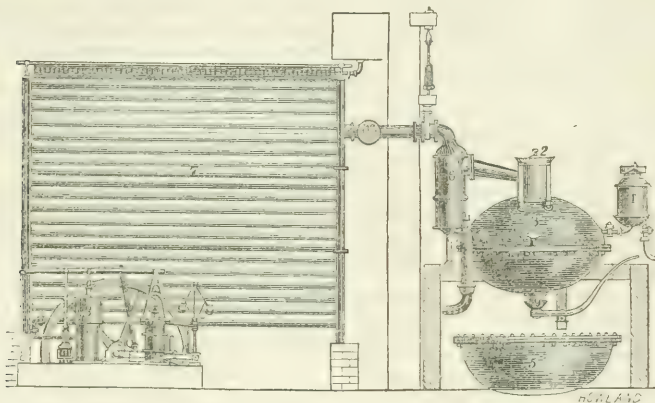
* In a metallic vessel. Gay-Lussac has proved that water boils at 214° in one of glass; owing, apparently, to its adhering to glass more powerfully than to a metal.

instrument,* which has already effected such improvements in the home refinery process, and which is destined before long to extend its ameliorating influence to the colonies abroad.

The vacuum-pan may be described as composed of two copper segments of spheres joined together at the edges. The lower hemisphere is imbedded into a steam-jacket or space, into which steam, of a varying pressure up to 3 lbs. to the inch, can be forced; and in order to increase the area of heating steam surface beyond the amount furnished by the lower segment of the pan, there passes internally a coil of copper pipe, through which a current of steam may be made to rush. It is obvious that any liquid put into a vessel of this kind, will be exposed to so large an amount of heating surface that it must soon arrive at its boiling point; but

the vacuum-producing part of the apparatus has yet to be described. Attached to the pan at its upper part is a pipe of communication, with a cylindrical vessel called a condenser,* and which is exactly similar to the condensing apparatus in a low-pressure steam engine, consisting either of a means of injecting a gush of cold water through a series of minute holes, which plan is called that of direct condensation, or else of a series of small tubes exposed to the external agency of water—a plan denominated that of indirect or tubular condensation. Beyond this condenser, and communicating with it, is a powerful air-pump.

The accompanying wood-cut, however, represents a condenser (7) of a different and more effective kind. It is the external condensing system of Messrs. Pontifex.



The action of this apparatus in the aggregate will be as follows: The pan being filled to the desired extent with sugar solution to be evaporated, steam being let on to the jacket and into the coil, the temperature of the liquor continues to rise. Meantime, the air-pump being set to work, a partial vacuum is produced, and the atmospheric pressure exerted upon the syrup in the pan, is gradually lowered to such an extent that the liquid begins to boil.

The vapor resulting from this ebullition, passing into the condenser, is exposed to the agency of cold water, and immediately assumes the liquid state; finally, this condensed water is drawn off by the air pump, as it is called, although the instrument performs the mixed function of pumping both air and water.

Such are the essential portions of the vacuum-pan; but certain accessory parts are

yet to be described. The most important of these is the appendage called the proof-stick—a contrivance, by means of which the operator can, from time to time, remove and examine a portion of the evaporating syrup without the least destruction of the partial vacuum. Attached to the copper segment of the pan is a thermometer, for the purpose of indicating the temperature of the syrup, and also a vacuum-gauge, as it is technically called,—an instrument on the barometric principle, by referring to which the amount of atmospheric pressure exercised at any

* Between the vacuum-pan and condenser is a vessel destined to contain any solution which may boil over. This vessel, however, theoretically, may be considered as a mere expansion of the vacuum-pan. This is indicated in the diagram by the figure 6. The other portions of the apparatus are as follow: (1) the measure, (2) the man-hole, with ground cover, (3) vacuum-pan, (4) proof-stick, (5) heater, (7) condenser, (8) steam-engine and air-pump, (9) escape valve of the vacuum-pan, through which its contents pass into the heater.

* His patent was taken out in 1819.

period on the evaporating liquid can be at once read off. On the summit of the upper segment of the pan is a man-hole,* supplied with an accurately ground cover, and, by the side of it, an entrance for each successive charge of liquor, which passes from an adjoining vessel, of determinate capacity, called the *measure*.

At the lowest part of the under hemisphere is situated a valve, through which the sugar solution, when sufficiently boiled, is allowed to escape into another vessel called the heater, or, occasionally, the cooler.†

This heater may be compared to the lower segment of a vacuum-pan, minus its coil, being a copper pan imbedded in a steam-jacket, by the agency of which a graduated heat may be applied.

The use of this instrument is to allow the conditions of time and prolonged fluidity for the more perfect development of those crystals, the formation of which has been already commenced during the operation of vacuum-boiling.

Fuller details of the employment of the vacuum-pan and its accessory, the heater, will be given under the head of "refinery operations"—such a general account of these instruments merely being here given as might suffice for the purpose of investigating the advantages and disadvantages of the colonial operation of vacuum-boiling.

It is a subject of much surprise to many persons who have witnessed the results of vacuum-pan boiling at home in refineries, that, when used in the colonies, it has been productive of such ambiguous results. This surprise will vanish when we consider the conditions under which a vacuum-pan can be profitably worked, and how difficult of attainment these conditions have hitherto been in the colonies. However objectionable, in most points of view, the ordinary colonial evaporating process may be, it nevertheless is well adapted to the end of removal of impurities by surface-skimming—an operation which is totally impracticable when the vacuum-pan is employed. Hence, although this valuable instrument exercises the full amount of its well-known and legitimate influence—although it may effect evaporation at the practical minimum—although an experienced boiler may be present to *strike* or

let off its contents at the proper time, still the result of boiling an impure juice in vacuo will in all cases be—an impure sugar.

The fact is at length becoming so well recognized, that a gentleman, of much practical experience as an engineer in the West Indian colonies, informs me of a resolve he had made never again to set up a vacuum-pan on any West Indian property, (save a few exceptional estates, on which the juice was remarkably pure,) except under a guarantee that the juice should have been submitted to a charcoal filtration, this being the only means at that period known to him as capable of effecting the necessary amount of defecation.

It may very safely be asserted, that the great utility of the vacuum-pan has yet to be demonstrated to colonial sugar-growers. Hitherto, even on estates where it has given a qualified satisfaction, the true genius of the instrument has been altogether misunderstood. Instead of aiming at the production of a well-crystallized result, mixed with a thin syrup of drainage or molasses, admitting of easy removal, and then leaving the sugar almost dry, the general aim of the colonial sugar-maker has been to produce, by high or stiff boiling, the maximum amount of semi-crystalline produce. If this kind of material were a marketable commodity in its present state, the endeavor of aiming at its maximum produce would be intelligible; but as it requires the expensive process of liquoring to render it fit for the market, the process of stiff boiling is in contravention of all proprieties.*

The method in which the liquoring is commonly practised in the West Indies is fearfully wasteful, and in other respects open to the greatest censure.

Under the definition of liquoring, the principle of that operation has been explained. I will now offer, in anticipation of another part of this treatise, a concise explanation of the mode of conducting it in refineries, in order to demonstrate most powerfully the destructive mode followed in the colonies.

Under the proper conditions of temperature, hereafter to be mentioned, the refiner puts his boiled and crystalline syrup into moulds, supported on their apices, and the hole of each apex stopped with a pledget of brown paper. Here the mass is allowed to cool; and, when cold, the plug in the apex being withdrawn, each mould is supported on a corresponding earthen pot. A portion of syrup, technically known as green syrup, more or less colored, now drains away, and

* The aperture through which a man enters the vacuum-pan for the purpose of cleaning it.

† The indifferent application of the term heater and cooler, the one for the other, is curious, although easy to be explained. So long as sugar solutions were boiled in open pans under the ordinary atmospheric pressure, and at a temperature of 220° and upwards, the vessel in which the boiled liquor was allowed to assume a temperature of 176° might appropriately enough be denominated a cooler. But under the process of vacuum-pan boiling, at a temperature of about 140°, this vessel, in which the latter degree of temperature becomes changed to 176°, as before, is to all intents a heater; still the old name is in many refineries maintained.

* Dr. Evans informs me, that in the island of Java there are used vacuum-pans having an escape aperture in the side, through which the solid concrete is shovelled by a man sent into the pan for that purpose, after each boiling operation. A patentee, moreover, actually proposes to grind this kind of concrete into grains by a mill!

the cone of sugar is left comparatively dry. The sugar forming the base or face of each being now removed by a revolving cutter, termed the *facing machine*, the sugar so removed is mixed with water to the consistence of a thin magma (technically named clay) and reimposed in the base of the cone. This is the operation termed in refineries *claying*. After some hours the operation of liquoring commences by pouring on the smooth surface, or face left by the subsidence of the clay, a concentrated aqueous solution of sugar. The result of this operation is, that the coloring matters of the sugar are totally washed into the pot below, and a loaf of white sugar is formed.

As conducted in refineries, the operation of liquoring is most philosophical, and most efficient—an operation without which, or the equivalent one of prolonged claying, a thoroughly white sugar cannot be made. Its success depends so entirely on the purity and saturation of the *magma liquor*, or aqueous solution of sugar, that the preparation of the latter is a matter to the intelligent refiner of greatest solicitude. If the magma liquor be *colored*, it is evident the sugar which it is employed to wash cannot be *colorless*. If the magma liquor, also, be not fully saturated, it will become so during percolation, at the expense of the sugar which it is intended to cleanse—and the loaves will be partially dissolved. This is too evident for further comment. What, then, would be thought of the refiner, who, in violation of the obvious principles just laid down, should attempt to liquor by means of water? And yet this is the kind of liquoring very frequently performed in some of the West Indian islands where vacuum-pans are used. The concentration having been carried on, as I have already remarked, to a higher extent than propriety warrants, the mass is cooled, thrown into a pneumatic chest, and affused with water by means of a garden-pot! The air-pump is now put vigorously to work; a partial vacuum is produced underneath, and the water of affusion, carrying with it many impurities, and much sugar also, is drawn into the cistern below. It is a fortunate circumstance that the crystals or grains of vacuum boiling are usually large, and, therefore, less easily soluble than they would be if they presented greater surface to the agency of the solvent—otherwise the loss attendant on this most improper operation would be greatly augmented. The final result of this rude process of liquoring is, a large-grained dusky yellow sugar, now generally used for the purpose of sweetening coffee. Considered in the abstract, without reference to the steps by which it was obtained, this sugar might be taken as a proof of the benefits of colonial vacuum-pan boiling; and hence, from want of a fuller acquaintance with the subject,

the most erroneous notions have been disseminated.

The rude process of liquoring by water, already described, is not invariably followed, it is true, in the colonies; sometimes a portion of juice, defecated and evaporated, to a certain extent, is substituted. Occasionally, too, the refinery process of making pure magma liquor has been adopted, but still under circumstances involving the greatest improprieties.

The propriety or impropriety of the claying and liquoring operations, in the colonies, can only be correctly judged of by reference to the precise end desired to be achieved. Thus it is possible to conceive a manufacture injured, even to ruin, by instituting false comparisons between it and another, and by the introduction of appliances, admirably adapted to the former case, but adverse to the latter. The colonial application of the process of liquoring, even when well managed, is emphatically open to the remarks just made. The refiner's object is to procure a white sugar, and the process of liquoring is absolutely necessary to give him this; therefore, cost what it may, the operation must be followed. The object of the colonial sugar-maker, however, is, and has been, to obtain a *yellow* colored sugar; a staple which may be made in the greatest perfection of tint without the employment of any claying or liquoring process whatever; without charcoal, alumina, or lime; as will be hereafter demonstrated. True it is, that if the cane-juice be boiled too high, especially if in contact with lime, and other impurities, the process of liquoring will be required to remove such a portion of them, that the resulting sugar shall have a marketable color. But the contemplation of this fact brings us back again to the conclusion already arrived at:—That no secondary appliances—not even the vacuum-pan—can accomplish any great amelioration of the sugar produce, whilst made to operate upon an impure juice.

Under the definition *Claying*, has been given a condensed account of the colonial process of claying. It is necessary now to contemplate it a little more narrowly in detail. The operation is more particularly followed by the Spanish and Portuguese colonies; and in a modified form also by the natives of Hindostan.

The general manner of conducting the operation is as follows:—Instead of putting the sugar to be drained into casks, it is placed in large earthenware or iron cones, after the method of refineries, and the green syrup is allowed to percolate away.

At this period, a magma or pap of white clay and water is superimposed; the agency of which is, manifestly, to wash away a portion of the chemical coloring impurities existent in yellow sugar. The operation of

claying is repeated twice or thrice, each coat of clay as it dries being removed, and another substituted in its place.

This claying operation is a most extravagant one; involving the loss of a third part of the original contents of the cone; and producing, after all, a sugar, which, even at the base of the cones, or nearest to the clay, is far from white.

It has already been remarked, that in India a modified process of claying is pursued. An equivalent process would be a more correct expression; but not to discuss one principle under many heads, the term *claying* may be retained to express the Indian operation.

Instead of using clay, or a magma of sugar and water termed clay by the English refiners, the Hindoos generally attain the end of washing their raw sugar partially white, by superimposing on the base of the conical contents masses of hygrometric weeds or damp cloths; the effect of either being—the gradual liberation of water, and consequently, the partial removal of chemical coloring impurities.

By following the processes of claying or liquoring, under almost any of their modifications, the darkest sugars may be made comparatively light-colored; and thus may be made to yield a product capable of misleading the unwary.

Thus it often happens that samples of light-colored sugars are displayed, and appealed to, as triumphs of some new method of sugar manufacture—the only beauty of such sugars being such as is derived from the claying or liquoring processes; and which sugars, before the application of these processes, might have been almost black. This mode of displaying sugars is a piece of charlatanry which cannot be too severely reprobated. There is another, scarcely more defensible, namely—the display of large crystals or grains, which every chemist knows any sample of cane sugar can be made to assume, by mere devices of evaporation and cooling.

It cannot, however, be a matter of wonder, that the latter deceit should be largely practised, when it is considered that the sugar community has elevated the question of grain into a most unsafe position; and has made it a false criterion of qualities with which it has no connection whatever.

The sugar broker, or refiner, attaches great importance to the touch which certain sugars impart when pressed, or rubbed between the finger and thumb; and accordingly as it feels soft or hard, it is pronounced weak or strong—this criterion, like many others which have been misapplied, is, within proper limits, safe and good—without those limits, productive of serious errors.

The first body into which sugar becomes

changed, in the downward series of destructive metamorphoses, is glucose or grape sugar; which, if present in any considerable quantity, is most inimical to the formation of large crystals; it moreover imparts to the mass a condition of clammy pastiness. Under these circumstances, the sense of touch would be a very safe guide to the purchaser of raw sugar; who would be acting consistently in repudiating all sugars possessing small grain, *from this cause*. But the rule may be extended to the furthest limits of falsehood; even to the absurdity of pronouncing refined sugar in powder—*weak*, but the same sugar in the lump—*strong*.

Having discussed the fallacy of being guided implicitly by the sense of touch, it remains to show the fallacies attendant on the sense of taste.

Nothing is more common than the affirmation, that one certain sugar has more sweetness than another, or that it possesses more saccharine matter; and to place the affirmation in its most absurd light, the amount of sweetness or saccharine matter is made to decrease in proportion to the purity of the sugar. Thus, it is a very common affirmation, that white sugar does not sweeten so well as yellow sugar; in other words, that pure sugar does not sweeten so well as that which is impure:—*because the former has less saccharine matter than the latter!* Such is the common assertion—one that may be heard very widely disseminated indeed—from the cook in our own kitchens to the brokers in Mincing Lane; and, strange to say, in refineries too. Once admit the assertion to be valid, and to what a chaos of absurdity are we led! The whole system of sugar refining, with all its costliness, all its complexity, all its experience, is prosecuted—for what? To render sugar less saccharine—to effect a destruction? Such is the necessary conclusion.

To explain these discrepancies between language and facts, is not so difficult as it may at first seem—they originate in the use of lax expressions, based upon evidence of the most fallacious of all our senses—the sense of taste.

It is a fact very well known to physiologists, that when certain tastes of different kinds and of different amounts of intensity are combined, so that they affect the gustatory organs at once—the judgment, although unable to discriminate between them, and forming a conception alone of that taste which is most familiar, or most predominant *as to kind*; nevertheless as to the qualities of strength or pungency—the judgment conveys a mixed idea of both. Or when two bodies are mixed—one alone of which has a taste—(practically or absolutely)—the effect of the tasteless body is often confounded with the effect of the other.

The above is not a mere fine-wrought philosophical deduction; but one which has been applied to practice, and its truth demonstrated in many ways. Thus the dishonest tavern-keeper adulterates his spirit, particularly gin, with tincture of capsicum, and his beer with *cocculus indicus*—in either case to impart a fictitious alcoholic strength. The most untutored palate would distinguish between the taste of gin, and of Cayenne pepper, alone; but when mixed in certain proportions, the pungency imparted by the latter to the gustatory organs is recognized, but not discriminated—both together conveying the vague idea of strength.

As to *cocculus indicus*, it is devoid of pungency, but is a narcotic; nevertheless, the judgment is equally deceived, as in the former case.

Again, to take another instance, there are few snuff-takers with nasal organs so obtuse, as to be incapable of distinguishing lime, powdered glass, extract of logwood, sand, sal-ammoniac, or smelling-salts, from the powder of tobacco. Yet in the form of snuff the nose is continually deceived. All these foreign bodies may be and frequently are mixed with snuff to give it a pungency; each agent conveys an impression, but loses its individuality—the idea of tobacco preponderates over all the rest.

Thus is it with impure or colored sugars, which consist of sugar, plus many foreign bodies, each possessing its own abstract individual taste;—conveying when alone a notion both of kind and degree;—but when in conjunction—only the latter; which goes to augment the predominant idea of sweetness conveyed by the most familiar, most prevailing substance of the mixture—sugar.

Here is a fruitful source of the fallacy adverted to; but there is another. The idea of sweetness, as conveyed by sugars equally pure, varies in direct ratio to the amount of comminution; hence large-grained sugars seem to be less sweet than those the grains of which are small. The reason of this will be evident, when it is considered that all substances which are insoluble in the saliva are totally devoid of taste,—and that the taste of all other substances is in direct ratio to the rapidity with which they are dissolved in the mouth.

It is very evident, then, that the sense of taste is far too fallacious in its nature, and tends to inferences far too vague, for the decision of such an important matter as the amount of actual sugar in any saccharine mixture; such as raw sugar, under any of its conventional denominations, must be regarded. Neither is the test of specific gravity at all more decisive; for, in the most impure of raw sugars, the total amount of impurities bears but a very trifling ratio to the mass; and, moreover, possesses a specific gravity so little different from that of sugar, that for all

practical purposes it may safely be asserted, that all samples of raw sugar, of equal dryness, form, with equal amounts of water of equal temperatures, solutions, the specific gravities of which are also equal. Hence the hydrostatic or saccharometer test cannot, any more than other plans of taking specific gravities, convey the least idea of the purity or impurity, the goodness or badness, of raw sugars.

Having successively considered the chief methods pursued to effect the drainage of the non-crystallized from the crystallized portion of concentrated saccharine juices, and in what respects they are adequate or inadequate to the end desired, it now remains for me to devote some attention to the product of such drainage; which product is denominated by the vague term “molasses.”

It may be inferred from former remarks, that the investigation of the nature and properties of molasses will best be prosecuted by starting from the assumption that sugar may be concentrated by evaporation, without any destruction whatever: in which case the molasses, or liquor of drainage, would, by the precise analogue of that resulting from crystallized saltpetre consist of nothing but a solution of sugar in water. I have already remarked that this condition it is impossible absolutely to achieve; but by removing from the solution to be evaporated all destructive agents, and by properly regulating the application of heat, the amount of destruction may be reduced to such a minimum, that the molasses, or syrup of drainage, shall virtually, though not actually, be an aqueous solution of pure sugar.

Descending from this extreme summit of excellence to the other extreme of the scale, we at length arrive at the results of Soubeiran's experiment, wherein every particle of sugar was destroyed.

Within the limits bounded by these two extremes, the ratio between the amount of sugar destroyed, and the amount crystallized, may vary indefinitely; each product yielding a liquor, or syrup of drainage, to which the general term molasses will be applied; although such liquor of drainage may be anything, from an aqueous solution of sugar, accompanied by some mere traces of foreign bodies, up to a compound of little else than glucose, mixed with its black acid derivatives.

It is evident, therefore, that the term molasses is a most indefinite one, and should never be used in argument unless its meaning have been specially limited to the conditions of the instance under discussion. It appears, then, that liquor of drainage, or syrup, (molasses,) there ever must be, as the result of the crystallization of sugar, even under the most favorable circumstances; and the question of the best mode of treating it, for the purpose of obtaining its sugar, must be determined by reference to its richness in that substance.

And here the sugar producer is met, on the very threshold of his subject, by the necessity of accommodating his operation to an ill-defined popular taste. Were it a question with the colonial sugar producer of selling the pure material—*sugar*, his course might indeed be very difficult, but it would at least be well defined. At any price, cost what it might, he would be driven to cleanse all his raw crystallized material from every particle of coloring, or other non-crystallized substances; in other words, from every particle of its *molasses*. Such, however, is not the desideratum which the sugar producer has in view; the public expects him to produce a colored sugar; that is, a white sugar, each crystal of which is coated with a certain amount of molasses; to which latter the qualities of moistness and color are due. Now the question of how much molasses shall be thus allowed to remain as a coating, involves the consideration of such indeterminate matters as variety of popular tastes; of manufacturing expenses; the comparative value of sugar and rum, &c. As a general rule, however, the West India sugar producers, (those of Jamaica excepted, who obtain a high price for their rum,) consider it profitable to boil the juice very stiff, and export the muscovado sugar in a very undrained state. The glaring impropriety of this procedure has already been pointed out; therefore I need not advert to it again. It is desirable, however, to find adequate causes for a practice which appears so repugnant to all common intelligence.

The causes are chiefly as follow: The desire of the overseers to make a display of the quantity of sugar shipped. 2. The low market price of molasses by itself, compared with the market price of molasses as forming a part of muscovado sugar. It is painful to have to record the fact, that the real owners of a great number of West India estates are not ostensible ones, but merchants or brokers at home; who, by way of mortgage, have a direct lien on the property; and, indirectly, have the privilege of exclusive management, with all the commercial advantages thereby accruing. Under these circumstances, it is too frequently an object with the resident agent to make a display of a large amount of sugar produced on his estate, whereas the amount is merely one of sugar, plus the molasses absorbed. The material being thus placed on shipboard moist and undrained, may, under the circumstances of a fair wind, and easy passage, arrive here without great loss. If it do so arrive, its sale may be accomplished. The English grocer, by dint of mixing it with dry refinery pieces, and a certain portion of dry East India or Mauritius sugar, at length forms a compound of remunerative selling price, and all parties are satisfied. If, however, the passage should be rough, causing much agitation to the cargo, if the temperature should be unusually high, or the hogsheads unusually leaky, then a large

portion of the molasses percolates into the hold, and is pumped overboard.

Thus the present West India sugar manufacture is made to assume an appearance of risk and uncertainty which, so far from necessarily belonging to it, at least in the way indicated, may, by a system of improved treatment, be prevented altogether.

It is a question very commonly put by the colonial sugar producer, whether a specimen of sugar resulting from a certain process will stand the voyage? To such a question there is one general answer. Any sugar will stand the voyage provided it be well drained, and that it be freed from all impurities which are of a deliquescent nature. Sugar itself is unalterable, in an atmosphere of very considerable dampness; and the mere adherent brown, or yellow, coat of molasses, which imparts the peculiar color and sensation of moisture, without clamminess, to good muscovado sugar, is not sufficient in itself to cause any less by drainage.

As regards the second reason which influences the West India sugar producers in allowing their staple to be largely admixed with molasses, viz.: the low value of molasses by itself as compared with that of molasses when it forms part of muscovado sugar—it will be evident, on reflection, that the amount of sugar contained in bad molasses may be so small, so much admixed with impurities, that it either may not pay for re-evaporation, or that it must be evaporated alone. To evaporate it in the teache, mingled with fresh or uncrystallized syrup, would be impracticable, on account of the mass of impurities which would be thus imparted. It will be, moreover, evident, that beyond a certain point of richness in sugar, and general purity, molasses may thus be treated with propriety. Hence we are brought again to contemplate the first grand source of all improvements in the colonial sugar produce—the perfect defecation or purification of the juice. Until some process conducive to this end be generally followed by our colonists—until some means be devised of rendering the molasses or syrup of drainage so pure, that it may be returned without prejudice to the teache, and boiled with the concentrating juice, the chemist will expatiate in vain on the theoretical indications of a low boiling and perfect drainage, as necessary to the production of a well crystallized sugar. So long as the general run of molasses is of its present average impurity, so long will it be impossible to be boiled except alone—a process involving the use of more fuel than the West Indian colonist can command; indeed, if he could, the result would be scarcely marketable; and so long will the weight of semi-solid saccharine produce (sugar is a wrong term) obtained, be the result of the first, and only boil. If, however, the sugar producer could be made to follow some plan of defecating his juice, that would ensure a molasses so pure that it might be returned to

the teache, and the process repeated through several operations, he would then have no plea for the continuance of his present ill-judged plan, which may be, without impropriety, designated an operation of smuggling, devised for the purpose of selling molasses under the name of sugar.

If the West India sugar growers were to be furnished at once with a never-failing means of producing a large-grained, and therefore an easily cured sugar, to the exclusion of all other sorts, their produce would have to encounter a difficulty which the consumer would scarcely have imagined. Such large-grained sugars are very unfavorable to the perpetration of certain mysterious operations of legerdemain,* which grocers understand too well. They will not mix. A small-grained sugar may readily be incorporated with glucose, with pieces, or bastards, and other less innocent bodies, without such incorporation being discoverable to the eye. A large-grained sugar, on the other hand, is a most refractory material for these little manipulations; its crystals, no matter how mingled with contaminating agents, never ceasing to manifest their native brilliancy, and thus proclaiming the fraud. It is most easy, then, to understand why the grocer, as a rule, does not encourage these large-grained sugars. He cannot "*handle*" them, and therefore brands them with a fault. He says they are deficient in saccharine matter—that they will not sweeten. True it is, that comparatively small portions of these large-grained sugars are sold,—and sold at high prices; but merely as fancy articles, on the proceeds of which the grocer nets too little, to make their sale an object of primary solicitude.

Such is the source of one prejudice against dry and large-grained sugars—a prejudice originating amongst the grocers. There is also another, which originates amongst refiners;—who are adverse to the general consumption of these beautiful colonial sugars, for the very obvious reason—that the consumption of their own staple is thereby lessened. The refiner's expressed objection is remarkable, as embodying a philosophic idea not at all known to chemists, and, in fact, adverse to all chemical analogy. He is in the habit of saying that such large-grained sugars produced in the colonies contain a great amount of water, and hence they are—what he terms—weak. Now, for the sake of argument, we will see how it bears upon the refiner himself. If the vacuum-pan accomplishes the incorporation of water with sugar in the colonies, of course a similar effect results at home in refineries. Hence the refinery operation, thus proved to consist in effecting the crystalline incorporation of water with sugar, must be profitable beyond any limits which the public, and the Chancellor of the Exche-

quer, have hitherto assumed; and this enormous profit should be at once adequately taxed! To such absurdities are we led, by arguing from loosely-expressed current data.*

Having pointed out the injurious agency of lime as a defeccating agent, I will now pass in review the chief methods which have been had recourse to from time to time for accomplishing the important end of defeccation, without the employment of that destructive,—although not very efficient,—alkaline earth.

And here I will remark, that there scarcely exists a mineral salt, of whatever kind,—that does not, when a solution of it is added to sugar-containing juices, at the proper temperature—usually about 180°,—cause the precipitation of bulky, flocculent masses: being combinations of the impurities existing in the juice, with the mineral base of the salt. By witnessing effects of this kind, persons unacquainted with chemistry have been led to the most unsafe conclusions, and numerous are the pseudo-discoveries thus palmed upon the world.

To defeccate merely, or effect the separation of impurities from sugar-containing juices, is but one portion of the problem to be solved. The defeccating process must be effected without destruction to the sugar; and by an agent that is so perfectly under control, that any excess of it, above the quantity necessary to effect defeccation, shall be easily removable. For practical purposes, another and a most important condition must be achieved:—the whole must be effected within the limits of a remunerative cost.

It is painful to con over the numerous

* Lest it be thought I unjustly impugn the science of practical men well conversant with sugars, I will here mention two circumstances; one, for the truth of which I vouch; the other communicated to me by one of our largest metropolitan copper manufacturers. Towards the end of the summer of 1848, I showed a London broker a very fine sample of well crystallized colonial sugar. His comment was most peculiar. He told me that—"Now-a-days popular taste required the grain of sugar to be of a different shape to mine; people now liked grains with *rounded angles*!" The copper worker's anecdote is as follows:—"I was once sent for in a great hurry," he very naively told me, "to a refinery where a vacuum-pan of mine had been some time in work. I lost no time in hastening there, for the message was urgent. 'I want you to get a hole bored in the dome of that pan,'—was the sage request of the refiner, on my arrival. 'A hole in what?' said I. 'In the dome of that pan,' answered the refiner. 'But for what?' 'Because it is too tight—there is too much vacuum—in short the pan won't do.' In vain I remonstrated, in vain I pointed out the absurdity. The refiner had only one answer,—'His boiler said the pan was too tight—and bored a hole must be forthwith.' It was accordingly done." In fairness to the refiner it should be remarked, that his vacuum-pan had formerly a leak in it; which leak having been stopped, the boiler fancied that the pan worked less satisfactorily than before. From these premises a very absurd conclusion was arrived at, as we have seen.

* Termed by grocers "*handling*."

projects,—specious enough at a first glance, but in violation of the rules of guidance, or indications laid down,—which have been thrust upon the sugar producer, and the refiner, so often, and with such unvarying failure—that all new plans, however intrinsically good, are regarded always with suspicion and doubt—often with neglect or contempt.

Thus, in a patent specification lately published, sugar solutions in the colonies, and in refineries, are proposed to be defecated by operations that would effect the liberation in the sugar of nitric, sulphuric, prussic, and oxalic acids, without any provision for removing either of these deadly substances! Fortunately there is a chemical safeguard here. The presence of a minute trace of oxalic acid prevents the crystallization of sugar—and the same remark applies, though less forcibly, to the presence of nitric and sulphuric acids. The author of this patent being totally ignorant of chemistry, was misled by the fallacious appearance of a mere separation of coagula.

Foremost amongst the materials which have been employed at various times, both in the colonies and for refinery use, is the earth alumina, in some of the various states which it may be made to assume. The idea of employing alumina seems to be derived from a somewhat analogous application of this substance, for the making of vegetable matters, termed lakes. Thus, if a decoction of logwood be mixed with a solution of the salt alum—which is a compound of sulphuric acid, potash, and alumina—and a solution of potash added, the earth, alumina, is set free; and immediately combining with the coloring matter of the logwood, both fall in union, and constitute a precipitate which, when dried and powdered, is called a lake. Instead of logwood, various other vegetable, and some animal, coloring bodies may be substituted; and with a similar result.

Following out this idea, alumina has been employed with the view of separating the coloring matters out of solutions of muscovado sugar, and the general vegetable impurities out of cane-juice.

On cane-juice I have never had an opportunity of trying it; but on solutions of muscovado sugar I have frequently tested the powers of alumina, without, in any case, being much struck with its utility. A certain defecating effect it unquestionably produces; but by no means to the extent that would induce one to anticipate any vital or radical improvement in the sugar manufacture, home or colonial, by generally adopting it. Not long since I was called upon to witness the effect produced by a mixture of alumina, sulphate of lime, and bone-black, on a solu-

tion of Khaur sugar.* The experiment was shown me as a triumph, but I was at a loss to conceive how the result could have been worse.

Alumina, as prepared in its purity by chemists, would be inapplicable to the purpose indicated, no matter how successful in its results, merely from considerations of expense:—many cheap modifications of the material have, therefore, been from time to time devised. One of the most general of these was discovered by the honorable Mr. Howard, (the inventor of the vacuum-pan,) in 1812: and consists of a mixture of sulphate of lime, free lime, and alumina. This mixture, commonly known as *Howard's Finings*, is prepared by adding to a solution of alum and water, a portion of cream of lime, sufficient to combine with all the sulphuric acid of the alumina, to throw down the alumina, and to leave an excess of lime. The supernatant liquor of this operation, consisting of sulphate of potash, must be absolutely washed away, or it will impart an injurious quality of deliquescence to such sugar as may be prepared with the finings. In a patent of some years' standing, chalk, instead of lime is used to decompose the alum; with what advantage, however, is not so obvious.

In France and other countries where sugar is largely manufactured from beet-root juice, the *sulphate of alumina*—(not alum, which is the potash sulphate of that base)—is largely employed as a defecating agent. On solutions of muscovado sugar I can affirm, from experience, that its defecating properties by no means come up to the expectations I had been induced to form.

Very far superior to all other agents, as precipitants for the vegetable impurities of natural sugar-containing juices, as also for the impurities existing in muscovado sugar, are the acetates, particularly the basic, or sub-acetates of lead.

So wide is the sphere of operation which these bodies possess, as precipitants of the aluminous and colored matter of vegetable juices, that even the juice of beet-root, which, after being allowed to remain in contact with the air for about half an hour, becomes black, is instantly purified to such an extent that when filtered, it resembles water. Not only do these salts of lead precipitate the general impurities from raw vegetable juices, but even a number of dark-colored decoctions are rendered, by treatment with it, comparatively colorless in a few instants. Chemists have long been aware of this property—have long used the acetates of lead as precipitating agents for certain aluminous and colored matters, in the laboratory, with the most perfect suc-

* A most impure result of the native sugar manufacture in Hindostan.

cess; every attempt, however, to employ these agents satisfactorily, even on the small scale, for the purpose of throwing down the impurities from muscovado sugar in solution, or from cane-juice, was unsatisfactory; whilst, on the large scale, the attempt, when tried, failed altogether.

The reasons of this failure, in the employment of lead salts for the purpose indicated, are various, as will presently be recognized.

The first problems to be solved are these: either to use the lead salt in such exact proportion to the amount of impurity with which it is intended to combine, that both shall fall down in combination, and be capable of removal; or to add a known excess of lead salt to the sugar solution, to separate the precipitate caused by filtration; then to throw down from the filtered liquor all the remaining lead by means of some precipitating agent not productive of injury to the sugar; and as a subsidiary problem, to remove the acetic acid liberated from the lead, either as an insoluble compound, or to combine it with some body that shall neither be injurious to sugar, nor to health, and separable, if possible, by the process of drainage.

Such are the necessities of the case, even in the laboratory, on a small scale. Let us examine how they can be met.

The first problem does not admit of solution,—it involves an impossibility: inasmuch as, however small, above a certain microscopic limit, the quantity of lead salt added, the filtered solution will still contain lead; although a fresh addition of more lead salt to the filtrate will not fail to produce a new precipitate. This circumstance can be accounted for, by assuming the concurrent formation of two or more compounds of lead and vegetable matters; one compound being soluble, and the other not.

In operating on sugar thus, we are reduced to the necessity of disregarding, as a means of safety, all apportionment whatever—the only way left open to us is, to precipitate the excess of lead.

Simple as this may appear as a laboratory operation, it cannot be accomplished by the ordinary laboratory means. The usual agent employed by chemists to separate lead out of solutions is hydrosulphuric acid gas, a body which throws it down effectually from sugar solutions, it is true, but spoils the sugar in consequence of the facility with which, by trifling circumstances, it is decomposed, with the liberation of sulphur. Hence, so frequently had the experiment been tried, and with such uniformly bad success, that not only was the idea of employing these agents in combination relinquished, but the ruin of the sugar was attributed not to the proper cause—viz.:

the effect of hydrosulphuric acid employed to separate the lead, but to the lead itself.

The employment of hydrosulphuric acid thus being out of the question, we have next to examine the other means commonly employed in the laboratory for accomplishing that end. Occasionally sulphuric acid* is used to separate lead out of solutions; which end it accomplishes perfectly, even out of those of sugar; but if sulphuric acid be employed, it is incumbent on the operator to add one exact quantity—no more—no less: if too much, the free or uncombined overplus of acid, by acting on the sugar, would speedily convert it—first into glucose, and thence downward in the scale of destruction into glucic, melasinic, sacchulmic, sacchumic acids, &c.: if too little, there would remain an excess of lead; which not only is injurious to health, but, also, if boiled with sugar, a very destructive agent.

The question of lead, then, as a defecator for sugar, seemed hopeless. Its remarkable action was witnessed, admired, and abandoned, until in the year 1839, Messrs. Gwynne and Young took out a patent for the separation of the excess of lead by means of the diphosphate of lime—an agent which, in the laboratory, can be made to succeed perfectly, but which I believe to be, both on the score of expense and uncertainty, totally inapplicable on the large scale.

These gentlemen, however, deserve great praise for their investigations, which are, chemically considered, of a masterly kind. Although the operation necessarily failed in practice, for reasons which I have indicated, its perfect success in laboratory quantities, demonstrated the most important fact,—*that the acetates of lead, per se, were not so injurious to the constitution of sugar.*

This demonstration having been accomplished, the chemist was warranted in resuming the task of finding out some precipitating body that should not only act in the laboratory under chemical superintendence, but one that should act anywhere, and in any quantity.

Such an agent I was fortunate enough to discover in July, 1847. This precipitant is sulphurous acid gas: the methods of employing which I have recorded in another publication, and therefore need not repeat here, seeing that my present object is simply to record a chemical fact.

Since the period of July, 1847, the efficacy of this gas has been tried on the large scale in a refinery, and also on cane-juice: in both cases with the most perfect success.

* Sulphuric acid has lately been tried by a gentleman in India, who utterly failed, however, in achieving the object proposed.

The Operation of Refining—Defects of Present System—General Summary, &c.—The term sugar refining, is applied, as is well known, to the operation, or series of operations, by means of which the dark impurities are extracted or separated from white sugar, and the latter is isolated.

Hence the terms, white sugar and refined sugar, have grown to be synonymous; and the idea has been created that white sugar must necessarily be the product of a second operation. This notion is most fallacious, and not more fallacious than injurious, by causing the impression, that no such body as white sugar could be primarily extracted from the cane-juice, or other sugar containing juices.

Very frequently do we hear the colonial sugar-growers subjected to many, and adverse remarks, because they have not, as it has been asserted, developed their art with the rapidity that modern scientific aids would have enabled them to do.

Much of this animadversion is unjust; for, not only until the passing of Sir Robert Peel's Sugar Bill, in 1843, was the colonial sugar producer not encouraged to make a product beyond a certain limit of goodness, but he was not permitted to do so; every step he took in this direction being checked by a high protective duty, with the object of favoring the home refineries.

Immediately the sugar duties were re-adjusted, the intelligent colonial sugar-growers availed themselves of the opportunity to improve their staple; but unfortunately, they began with machinery instead of chemistry. They relied on improved means of boiling; not having yet procured the proper liquid to be boiled. Whilst their new experiments were being prosecuted—whilst they were bearing most stoically their present losses, and looking forward to a brighter future, England became deluged with finer sugars of Cuba and Brazil, made by the claying operation. The West India sugar-grower was undersold, and, too frequently, ruined. Often do we hear the question put—wherefore the West India sugar-grower does not practise the claying process? The question manifests little acquaintance with the subject at issue. The process of claying, be it remembered, is not indicative of an improved sugar manufacture, as is commonly supposed; but merely indicative of the fact that, at the expense of time, of labor, and a third of the material operated on, it has been deemed expedient to accomplish the washing out a certain amount of impurities from Muscovado sugar. These facts being well considered as premises, the conclusion may very safely be arrived at—that the claying operation can only be remuneratively practised under one of the following conditions:—either in communities where slavery pre-

vails, or where the price of labor (as in India) falls below the usual average.*

But to return to the subject of sugar refining.

In commencing the study of this manufacturing operation, it will be useful to consider the theoretical indications to be followed out.

The substance to be operated upon is raw sugar; and the object to be kept in view is—to extract the maximum of impurities, with the minimum of expense, and of loss.

It has been already remarked, that if Muscovado, or yellow sugar, were contaminated by chemical or soluble impurities only, the processes of claying and liquoring would effectually remove them. This, however, is far from being the case. If a portion of the purest colonial sugar (made without animal charcoal) be dissolved in water, the presence of mechanical or floating impurities will be very manifest. Such impurities must be got rid of at any cost, before the sugar can be refined. The most obvious way of accomplishing this removal would seem to consist in mechanical filtration through fibrous textures, followed by evaporation; and this succeeded by the process of claying and liquoring.

It happens, however, that, even were this process the most desirable, as well as the most obvious, yet the filtration of such sugar in thick solution is no very easy matter, on account of the glutinous nature of the chemical colored impurities, as the experimenter may prove by means of a filter of paper; however, by allowing sufficient time, the thing, as an experiment, may be done; and I will suppose it done, for the sake of the next demonstration.

The liquor, when so filtered, if placed between the eye and a ray of light, will be found to be entirely free from the mechanical impurities formerly visible; but it will be as dark from the presence of chemical impurities as before filtration. The indication, therefore, is obviously to reduce those chemical impurities, by means of some combination, to a mechanical, or filtrable condition. The usual agent employed for this purpose in refineries, is an aqueous solution of lime; that is to say, lime-water.

If a portion of the dark filtered solution be mixed with a portion of lime-water, in a test tube, and heated by a spirit-lamp flame, a manifest change will be observed. A portion of the soluble impurities will be found to become insoluble, assuming the condition of brownish flakes, and rendering the solution turbid.

The liquor now will be found to pass much more readily through a paper filter

* This remark only refers to the actual use of clay, not to the operation termed claying in refineries.

than before; and, moreover, it will have been considerably lightened as to color.

If the filtration process be conducted with less care, the liquor, as it passes through, will be contaminated with a portion of the separated impurities; which, in point of fact, are so delicate in their physical nature, that the slightest force breaks them up and partially re-dissolves them:—a circumstance which, as may be imagined, would materially impede the filtering operation on a large scale. However, for the purpose of demonstration, it can be, and sometimes is, accomplished.

If a little white of egg and lime-water be mixed with a portion of the solution, while cold, and the mixture be then heated in another test tube, the same kind of result will be accomplished as in the last experiment, but with this addition:—the albumen of the white of egg, or the blood during coagulation, will envelop each floating particle of the mechanical impurity developed by the agency of lime, and bring it to the surface of the liquor in the form of scum; leaving the subnatant fluid clear and bright.

If the result of the last experiment be filtered, a fluid will come through—red, if blood has been employed; yellowish or amber, if the white of egg. Either of these solutions, on being evaporated, evolves an animal smell, and eventually yields crystals, from which the non-crystalline portion may be drained, and the crystals rendered white, by the process of claying, (real or virtual,) either alone, or succeeded by the process of liquoring.

If, instead of evaporating the liquid immediately after passing through the filter, it is made to percolate through granular bone-black, the result is marvelously improved. Every trace of color is dissipated, and the liquor feels less glutinous to the touch; it has acquired also, (owing to the removal of impurities,) an increased facility for crystallization. The smell of the animal matter, however, generally remains.

Having gone through these preliminaries, we are now in a position to contemplate the process of refining, as now prosecuted.

A good refinery should consist of not less than four floors; if more, all the better. Its walls should be strong, its planks well-seasoned, and close; and steam-pipes should be laid on throughout, so that a temperature of 80° can be easily commanded everywhere, cept on the ground-floor, or fill-house, the bastard curing-room, and the stove; the former of which will require a temperature of 120°, and the latter of 112 to 115° Fahr. Through the middle of each floor is a large square hole, capable of being shut by means of a trap-door; and through which the sugar is pulled, from the lowest floor to the highest, by means of a gin or small crane.

This is the best arrangement for a refinery; although the details of arrangement may vary considerably. The conditions which I have laid down, are adapted to the supposition that the sugar is dissolved on the highest floor, and that it is subsequently worked down to the lowest; where, having been boiled, it is filled into moulds. These conditions are most natural, and the most rational; but they are sometimes violated; the sugar being dissolved on one of the lower floors, and, subsequently, lifted again. By this latter method of procedure the height of a floor or story can be saved; but the operation of pumping is usually involved—an operation which is never to be recommended.*

Another floor or story in the refineries is frequently saved by a less objectionable plan—the liquor prepared for boiling being discharged on the ground-floor, and sucked up into the vacuum-pan on the second.

Wherever in a refinery the process be commenced, the first operation consists in effecting the solution of sugar, in such a mixture of water, lime-water, and blood—technically called *spice*—that the resulting liquor, at the temperature of 212° Fahr., shall have a specific gravity by a preference of about 1.241—equivalent to twenty-eight degrees of Beaumé's saccharometer. This operation, which is called *blowing up*—is thus performed:

The blow-up pan is a square or rectangular painted iron, or, much better, plain copper, tank, supplied with a perforated false bottom, under which is laid horizontally a three-armed tubular perforated pipe of copper, in connection with a steam-main. The use of this arrangement will be presently obvious. The sugar being put into the pan along with the predetermined quantity of blood, lime-water and water—the quantities of each being adjusted by no fixed rule—the blow-up man lets on his current of steam, which, penetrating into the arms of the trifid horizontal pipe, emerges in sharp jets through the small apertures of the latter, and heats the contents of the blow-up pan with great rapidity to the boiling temperature. For this blow-up operation, some houses use high pressure steam, some low pressure. There is now a prevailing opinion in favor of the latter, in consequence of the belief that high pressure steam is destructive of sugar. Mr. Pontifex† now prepares a solution-pan, similar in construction to the heater—i. e. the necessary heat is imparted by means of a steam-jacket, thus avoiding the escape of any steam into the solution. This gentleman in-

* Liquor can be raised by the pressure of steam much better than by the more common operation of pumping.

† The Messrs. Shears, of Bankside, have since borne testimony to the same effect.

forms me that the advantages attendant upon the use of this form of pan are very great ; a perceptibly larger amount of product, and of better quality, being the result. That the injection of high-pressure steam into sugar solutions is destructive, is rendered highly probable by the investigations of M. Violette, who has proved that wood may be carbonized by means of steam of only 6 lbs. pressure to the inch. (See *Journ. de Chim. et de Physique*, 1848.)

The result of boiling the contents of the blow-up pan will have been anticipated from a consideration of the experiment I have supposed to have been performed in a test-tube ; a thick, bulky, offensive scum arises to the surface of the liquid, which might be skimmed off with tolerable facility, and the subnatant liquor left in a state approaching to mechanical purity. This skimming, however, is never practised in the present day, filtration being had recourse to, as a much more efficacious plan.

The process of filtration now universally adopted, is the bag filtration system, as it is called ; and which offers the advantage of a very large surface, comprehended within a very small space.

The bag-filter consists of a sack of about 5½ feet long, made of twilled cotton, prepared for this specific use. When to be employed it is used as follows :—The bag itself, which is about two feet broad, is squeezed loosely into a smaller bag, (open at the bottom,) made of very coarse material, and technically known as the sheath. By this arrangement the whole filtering area of the bag is effective, although it is made to occupy very small dimensions. Each bag, with its accompanying sheath, is tied by the following device to a brass nozzle, slightly expanding at one end, to which the bag is affixed, and having a screw turned at the other end. The mouth of the bag, along with its sheath, having been brought well over the bell of the brass nozzle, is tied, sheath and all, moderately tight, by means of strong cord. As it would be next to impossible, however, to whip the cord sufficiently tight to prevent the bag slipping off, on a weight of sugar being poured into it, the following plan of tightening it is had recourse to. A small copper bar, of about four inches in length, being pushed under the cord, is twisted round until the necessary degree of tightness has been effected. The bar is now kept in position, and the twist prevented from returning by means of a second turn of the cord. Many of these bags, usually about thirty-six, are hung in one series, as will be presently described, of which series there must be two.

A cast-iron tray, perforated with the requisite number of screw-holes to correspond with the number of bell-nozzles, is made to form the upper part or roof of a wrought-iron

chest, supplied with doors, removable at pleasure, and rendered air-tight in their frames, during filtration, by means of tow and red lead made into a pad, (which engineers call a *gaskin*.)

At the inferior part of this chest are two exit cocks ; one supplied with a pipe, that conducts the filtered fluid away, and the other, technically called the foul-liquor cock, through which a portion of the filtered liquor may be examined, from time to time.

One other orifice has to be mentioned—it is for the purpose of admitting steam : in an atmosphere of which the filter-bags are caused to remain, during the whole period that filtration goes on. This is for the purpose of enabling the liquor to maintain its temperature—therefore to remain liquid ; and hence, to pass through readily,

The filter-chest and its accessories having been thus described, the operation of bag-filtration will be readily understood. The let-off cock at the blow-up pan being turned, the blow-up liquor necessarily runs into the trays forming the roof of the filter-chest ; thence into the bag-filters, and from them into the lower part of the chest. The first few buckets full of liquor which pass are always turbid. The liquor is, therefore, allowed to flow away through the foul-liquor cock, until a portion, being examined in a wine-glass or phial by the transmitted light of a candle or lamp, appears quite bright.

This period having arrived, the whole mass of liquor is allowed to run on to the charcoal-filter, or cistern, as it is more generally called. These charcoal-filters, or cisterns, are of various shapes, and made of various materials. The usual material is iron, and the usual shape that of a cylinder of about sixteen feet high, or more—by eight feet in diameter. Interiorly, the cylinder is supplied with a false and perforated bottom, on which is laid a piece of woolen. If made of iron, the cylinder should be internally well-painted with two coats of white lead on one of red. Copper is the preferable metal, but few refiners will encounter the expense of using it for charcoal cisterns.

Instead of the deep charcoal cistern just described, some manufacturers employ shallow tanks of iron or lead. The only advantage which these shallow tanks present over deep cisterns is—that they are better adapted to low buildings, and do not involve any perforation of the floors. Unquestionably, the decolorizing effect of charcoal is best exercised by the use of deep cisterns.

Whatever the form of the charcoal cisterns, they should never be made of, or lined with lead, inasmuch as a crust of carbonate of the metal becomes formed, and no sooner formed than dissolved in the sugar solution, where it may be generally found, if sought for. In this way I discovered, in the first day's liquor

of one of the largest London refineries, a considerable amount of lead.

I do not advert to this subject with the object of proving that the amount of lead present in the solution would have exercised any perceptibly noxious effect on the health—or any perceptible destructive agency on the sugar—but to record the fact of its presence, and thus to guard future experimenters from referring the origin of such lead to any specific process of refining, in which the acetates of lead have been employed, and from which they have been totally separated.

The process of conducting filtrations through bone-black, although remarkably simple in theory, yet requires some amount of practice to insure the maximum of success. The principal results to be aimed at are—to accomplish the maximum rapidity of percolation, with the minimum of coloring matter left in the filtered liquor.

This due rapidity of percolation is sometimes regulated by the exit-cock, under the false bottom of the charcoal-cistern—in which case the upper part of the cistern, above the margin of the charcoal, serves the purpose of a tank of reception for the whole bulk of the liquor, which has come away from the bag-filters. In other establishments, the charcoal-cistern is supplied with a cover perforated with two holes—through one of which the liquor is allowed to enter—through the other, a jet of steam; which latter is said to prevent fermentation, and to impart to the charcoal that amount of temperature most conducive to the desired decolorizing effect. In any case the outside of the cistern should be protected against cooling influences, by a coating of felt, and a casing of wood.

In allowing the liquor, as it comes from the bag-filter, to run on to the charcoal, care should always be taken to prevent the surface of the charcoal from being much disturbed. This object is usually attained by allowing the steam to impinge on some hard body laid upon the charcoal—a piece of broken pot, or a brick tile, is commonly used.

Whether the liquor be allowed to run on the charcoal gradually, or whether it be poured on at once, the surface of the charcoal should never be suffered to become dry. This neglect would infallibly cause the resulting filtrate—or filtrated liquor—to be turbid, or, as the refiners say, *milky*.

If deep cisterns be used, the liquor need not be caused to linger in the charcoal, by turning off the exit-cock, or otherwise—the first produce of filtration being usually perfectly decolorized and bright. Wherever shallow tanks are employed, however, the charcoal must be allowed to soak or digest with the liquid for a considerable time, before the latter is fit to draw off.

It is said, in general terms, that one ton of bone-black, well burned, is capable of per-

fectly decolorizing three of sugar. But this remark must necessarily be vague, and open to modifications, due to the influence of many collateral circumstances, as the reader will easily recognize. It must not be imagined, however, that the refiner unpacks his charcoal so soon as it ceases to effect the perfect deprivation of all color. He allows it, in point of fact, to remain until the last portions of filtered liquor, instead of being colorless, are considerably darker than dark sherry.

The refiner, however, manages in this way: He commences his refine* by using newly-burned charcoal and good sugars; he then goes on using sugars more and more impure, until the end of the third or fourth day, distinguishing his liquor as first day's, second day's, and third day's liquor, &c.; from each of which, respectively, are prepared sugars of corresponding quality.

In order to judge of the mechanical purity of liquor from the charcoal cisterns, it is submitted to a very vigorous optical test: a wine-glass or small phial full being collected, is held between the flame of a candle and the eye, when the slightest speck of mechanical impurity is perceptible, and is considered improper. If these mechanical impurities exist beyond a certain amount, the result is a cloudiness or opalescence; and the sugar produced from such liquors will be generally of a grayish cast. As regards chemical impurities, they are very seldom sought after by refiners, who entertain the most fallacious notion—that bone-black filtration is competent to remove all bodies, of whatever kind, except sugar and water. The opinion is in nothing more unfounded than in respect to lime—a body which refiners imagine to be most especially removed by the charcoal filtering operation. The fact, however, is, that lime, both combined and in the caustic form, may be generally, if not invariably, detected, by means of the appropriate tests; and, if the blowing-up pan be of iron, or if the painted internal coating of the iron charcoal-cistern be abraded, distinct traces of this metal will also be discoverable. Indeed, refiners often suffer from the existence of iron oxide in their sugars, to which red streaks or spots are thus imparted.†

* A refine is the series of consecutive solutions, or *blows-up*, upon which one charcoal-filter system is made to act.

† More than one patent has been taken out for the use of iron salts, as agents to defecate or purify sugars; and iron preparations have lately been tried in the house of Messrs. Fairrie—but with invariable want of success. Terry's Patent, involving the use of prussiate of potash and sulphuric acid, and thus liberating a cyanogen salt of potassium and iron (the bi-ferro-cyanide of potassium) was tried in the house of Messrs. M'Fie, of Liverpool; and I am assured by one of the firm, with the result of coloring the goods—in this case *blue*—owing to the re-action of the undecomposed prussiate on a portion of liberated iron oxide.

I will now assume a sufficient quantity of liquor to have come away from the charcoal, to admit of the occupation of vacuum boiling. The let-off cock of the charcoal-cistern I will assume to communicate with a tank placed above the level of the vacuum-pan—so that the liquor contained in the tank shall fall into the measure, and thence into the vacuum-pan, by the force of gravity.

The operation of vacuum boiling.—When treating of the subject of colonial sugar manufacture, so full a description of the vacuum-pan, and of the general process of vacuum boiling, has been given, that it only remains here to be remarked that, whether in the colonies, or in refineries, the operation and the end to be achieved by it are the same.

The reader will therefore assume that the liquor, having come from the charcoal tanks, has been subjected to the process of boiling, and has subsequently been allowed to remain in the heater for the necessary period, (say half an hour for good solutions,) to admit of the grain becoming sufficiently developed—the operation of filling the moulds or cones begins.

These moulds for loaves or crushed lump, and occasionally pieces, are either made of sheet iron, painted white internally—or of copper. The larger moulds, however, employed for accomplishing the drainage of bas-

tards, are generally made of rough clay ware.

For every kind of mould, copper is the best material; but the great expense of using it is a drawback to its general use, to such an extent, that very few of the more wealthy sugar refiners employ this metal, for any mould above the size necessary to contain a fourteen pound loaf.

Previous to the commencement of the filling operation, the moulds standing in triple or quadruple row, the hole in the apex of each accurately plugged with a pledget of brown paper, technically called “a stop,” are placed base upwards around the fill-house, in such a manner that the rearmost row is supported by the wall, and each successive row by one behind. Thus arranged, the greatest portion of the area of the fill-house is clear, enabling the operator, or operators, to fill any mould at pleasure.

The art of filling is very simple; one man dips, by means of a copper ladle, a portion of the crystallized mass, which he pours into the fill-basin, an instrument something like a copper coal-scuttle, with two small handles. This fill-basin, when charged with its contents, is carried underhanded, and somewhat between the legs of the fill-house man, to its destination—i. e., the moulds, which are then filled to the brim.



If the moulds were now left merely filled, their contents would aggregate irregularly, and a good loaf would not result. Some little time after the operation of filling, therefore, the process of hauling, as it is technically called, is had recourse to. It consists in agitating or incorporating, by means of a wooden spatula, some two or three inches in depth of the filled mass. Care, however, is taken not to push the hauling spatula too deep into the contents.

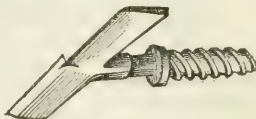
The process of hauling having been gone through, the cones are allowed to remain in the fill-house for a period varying with the size of the loaves—and hence of the mass to be cooled. Supposing 14lbs. loaves to be the size, a period of twelve hours is amply sufficient.

The filled moulds are now put into a basket, let down through the pull-up hole, and elevated to the second floor,* called the liquor loft, where the important operations, first, of natural drainage, then drainage effected by claying and liquoring, are conducted. Formerly, as I have remarked under the Def. Claying, real clay was employed; but now a mixture (not solution) of sugar and water, to which the term clay is applied, has taken its place.

As soon as the filled moulds arrive in the liquor loft, each is placed over a glazed earthen pot, the paper stops having been previously removed, and a bradawl is pushed up into the mass to the extent of two or three inches. Drainage now proceeds with an amount of rapidity dependent upon the amount of concentration to which the mass had been brought by evaporation, and on the absence of glucose and other impurities. If the evaporative concentration has not been carried very far, the result is said to be low, or free-boiled; if the contrary, the designation high, or stiff-boiled, is applied.

As heavy, compact loaves are a great desideratum to refiners, owing to the great cohesion of such loaves enabling them to withstand, without much injury, the agency of damp air, and the various mechanical shocks to which they will hereafter be exposed, it is a main object in the refinery operation to carry the evaporative agency to the maximum extent, consistent with free subsequent drainage. If carried beyond certain limits, however, the loaves either will not drain at all, or their syrup runs away with such difficulty that a great monetary loss is incurred. In refineries, the object of boiling stiff is intelligible enough, and founded on a scientific principle. In the colonies, the object, although intelligible, is most fallacious, and in direct contravention to all scientific indications. The colonial sugar-grower, who argues the existence of a refinery precedent for stiff boiling, forgets this most important difference, that,

whilst the refiner boils as stiff as is consistent with free drainage, he (the colonist) boils stiff, whether he can drain or no.



When the first or natural syrup of drainage has ceased to flow, each mould is removed, and a few inches (equal to the depth disturbed by the operation of hauling) of the mass removed by a revolving blade, with a central axis connected to a fly-wheel, and worked by a grindstone handle. This instrument is termed a facing-machine, (see next page,) and the chilled and badly-crystallized sugar thus removed falls into a box.

The contents of the moulds after natural drainage are said to be *in the green*, and the portions removed are termed *green cuttings*.

The moulds, with their contents, are now set again upon pots, (the same, or others, at the operator's pleasure,) and preparations for the claying operation are made. The green cuttings being put into a pan, are kneaded with water at first into a doughy consistency; and, finally, more water is added, until the whole is reduced to the condition of a thin-magma, termed clay.

Upon the base of each cone, again placed on the syrup-pots, is now poured so much of this clay as is sufficient to about half replace the amount of material cut away by the operation of facing.

In order to understand the precise rationale of the process of claying, it is necessary to remember that the claying agent is a saturated solution of sugar almost pure in water, mixed with a larger portion of sugar, suspended, but not dissolved. No sooner does the clay agent touch the surface of sugar in the mould, than a downward current of sugar solution is established, carrying before it a portion of colored syrup, and causing the base of the sugar-cone, to the extent of some inches, to assume a white appearance.

One operation of claying, however, is insufficient to effect a perfect whiteness throughout the loaf, and a repetition of the operation is not so effective as the process of *liquoring*, which is now in refineries universally followed. The liquor used for this operation is a saturated solution of pure sugar and water. It is prepared by dissolving in pure water—*i. e.*, not containing lime or spice—a porous kind of lump-sugar, such as results from the latter working of the refine, on the fourth day—in a blow-up pan, used exclusively for this purpose, and filtering the solution through a charcoal cistern, in the ordinary way, but with much care. When filtered, it should be colorless, and should possess a density at least of 32° Beau., at a

* The ground floor being considered the first.

FACING-MACHINE.



temperature of 70° Fahr. Owing to its possessing this high density, magma liquor is not prone to ferment; it may, therefore, be kept in tanks for a considerable time without danger. These liquor tanks, however, should be situated in a cool part of the building—their usual position being under the roof, in a loft, to which the external air has free access.

The operation of liquoring is commonly performed by means of a garden water-pot, without the rose, and simply consists in pouring upon the base of each conical lump of sugar, yet in the mould, as much as the mould will contain, an even surface having been previously made by an instrument termed the *bottoming trowel*.



The operation of this liquoring is precisely like that of claying, which has been described in de-

tail; and it effects the total separation by drainage of all chemical coloring matter. Fourteen pound loaves, if made of well-purified sugar, should be rendered neat or white by two successive liquorings.

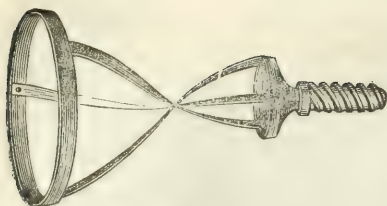
It is almost too obvious a matter for comment, or indication, that the last syrups of drainage, technically called *drips*, resulting from the operation of liquoring, are much purer; or, in other words, contain much more sugar than the natural syrup of drainage, and that resulting from the operation of

claying. Accordingly the drips are collected, and put into a tank alone, to be hereafter boiled up with a fresh working of sugar.

It will easily be observed, whether a loaf requires more liquoring or not, by lifting it from the pot, and noticing the color of the syrup which leaks away. This observation, it is scarcely necessary to remark, should be made when the drainage has almost ceased. If the drops are limpid, the operation has been complete, and the loaves are said to be *neat*: if they are colored, another liquoring is indicated.

The loaves are now allowed to remain for two or three days, when the clay is cut or scraped away from their surface by a kind of triangular blade. This operation is called brushing off. The loaves are slightly loosened in their moulds by striking the edges of the latter smartly against the upper end of a vertical post. This loosening contributes to perfect the drainage.

At the stage of loosening, a loaf may be completely removed from its mould, for the purpose of effecting an examination; which examination, in point of fact, is frequently made. When the loaves have become sufficiently dry to permit of being handled, they are taken out of the moulds, and their apices or noses are trimmed into regular form by means of the *noising machine*, an instrument consisting of three cutting blades so arranged on a rotatory shaft that the desired angle for the apices shall result.



Not only is this operation of nosing desirable, for the purpose of imparting a sharp, well-defined apex to the loaf, but also for removing a small amount of dark-colored sugar, of which the apex is, under the most favorable circumstances, composed. The efficacy of the claying and liquoring operations depends on the preponderance of gravity over capillary attraction. Hence there may be conceived a theoretical limit at which the two forces are balanced: practically, this point of equalization between the two forces is at a few inches above the apex of the cone, and corresponds with the limit of impure sugar.

Occasionally, when liquors have been overboiled, or when the material operated upon has been impure sugar, the point of equalization between the two forces is many inches above the normal line. To expedite the drainage of such cones they are stuck into a kind of funnel, the neck of which joins a suction-pipe in communication with the air-pump of the vacuum-pan. The result of this treatment is too obvious for comment.

The operation of *nosing* is never performed on the larger kind of loaves, which are known in commerce under the denomination of lumps; but the colored portion of the apex is simply cut off by means of a knife struck by a mallet.

The loaves now, if sufficiently dry, are wrapped in paper, and the last traces of moisture driven off by the operation of stoving. The stove is a chamber, or rather a hollow tower, provided with many rows of trellis work, and heated by steam-pipes to a temperature not above 115° Fahr. If higher, the sugar is discolored. The operation of stoving lasts about three days, when the loaves being taken out are ready for sale.

If, instead of loaves, the manufacturer desired to obtain the material known as crushed lump, the contents of the moulds would never be stoved at all: but when sufficiently dry, they would be taken out, and struck with a mallet, until reduced to a mass of disaggregated crystals. At least this is the plan followed in making the better kind of crushed lump. In Scotland, however, where crushed lump is employed more largely than in England, and where the maximum of whiteness is no object, the processes of claying and liquoring are omitted, the natu-

ral drainage of the sugar being sufficient to effect the desired result. I am informed, however, by a Scotch refiner, that for this operation the very best sugar must be used, and that it must be boiled very low or free.

Much of the economy of refining depends on the proper employment of the syrups of drainage, and on this point the following axiom should never be lost sight of—*That every syrup of drainage is more impure for equal specific gravities of aqueous solution than the sugar from which it has drained.*

This axiom will indicate the following rule to be adopted in the treatment of syrups, namely, to add the purest syrup to the purest sugar, and *vice versa*.

In proportion as sugar solutions are more frequently reboiled, so do their impurities continue to increase, (pp. 36, 57, and seq.,) until at length the impurities, when washed out, leave the crystals of sugar so far asunder, that the mass, instead of being hard and compact, is so porous that pressure with the end of a stick leaves an indentation: such masses could not be stoved for loaves, neither could they be profitably broken down for crushed lump, inasmuch as the crystals are small and ill-developed, in consequence of being admixed with so many impurities that the operation of crystallization has been impeded.

Chemically speaking, however, they consist, or by adequate liquoring can be made to consist, of sugar as pure as the hardest loaves; they therefore serve for making the magma liquor as already described.

When the impurities have so accumulated in syrups, that it is no longer profitable to obtain the white sugar out of them by the process of claying and liquoring, a compromise is effected of the following kind. They are no longer liquored with magma liquor, which would not be remunerative, but with syrup; and the result is called pieces. This is the real Jamaica sugar of many grocers.

When the material to be boiled is not sufficiently good to yield a light yellow product, dark clammy semi-crystallized masses are obtained, technically known as bastards. It cannot be too emphatically expressed, however, that the terms, pieces and bastards, are purely conventional;—that no intrinsic or essential difference whatever exists between them;—that both are admixtures of sugar with impurities;—and that such impurities may be separated—although it be not remunerative to do so.

Indeed the demonstration of this may be easily effected, by rubbing the pieces, or bastards, with alcohol, and filtering through paper. Cold alcohol does not dissolve sugar, but it readily dissolves the glucose and dark acids with which the latter is associated, and leaves the sugar nearly pure. The latter,

if dissolved in water, and carefully evaporated, leaves a result not distinguishable from that arising from any other pure sugar solution.

Bastards being the most impure kind of refinery-crystallized produce, the reader will have anticipated the remark, that the syrup of drainage from bastards is treacle.

The direct refinery operation being now gone through, it remains for me to describe the collateral processes of the scum and charcoal departments. The reader will therefore revert to the filter bags,—which necessarily contain all the mechanical impurities, or scum, as it is called, developed by the operation of boiling the mixture of raw sugar, water, lime water, and blood.

This scum, being somewhat bulky, must necessarily contain a large amount of sugar, to lose which would be totally irreconcilable with the close economy of civilized manufacture. The simplest plan in theory, to obtain sugar, would seem to be the common laboratory process of washing. So glutinous, however, is the impurity, and so bulky, that hot water will not pass through with the necessary rapidity: hence other means of extracting the contained sugar must be adopted. These means are as follows:—The bags being turned inside out, the contained scum is transferred to larger bags (scum bags) and exposed first to a pressure effected by the imposition of weights; afterwards, it is boiled with lime water; and finally exposed to the pressure of a screw, or of hydrostatic power; by which means the greater portion of the sugar is removed.

When removed, the liquor—scum liquor, as it is called—is one of the most impure, offensive liquids that can well be conceived. Its color resembles porter; its smell, that of putrid blood; its taste, according to such evidence as I can collect, is somewhat sweet. On this latter point I am free to own that I can bear no direct testimony.

If there be any truth in the chemical deduction previously arrived at, viz.: that the rapidity of decomposition for sugar solutions, *ceteris paribus*, is in direct ratio to the amount of impurities contained—this scum liquor must be a focus of so much mischief that it should never, under any pretext, be incorporated with the raw sugar of a refine. But now the practical question arises:—What is to be done with it? To evaporate so weak a solution of sugar and water—even devoid of impurities—would be practically impossible—seeing that the process of evaporation must be prolonged to the extent of destroying the chief part of the sugar. Then how much are the difficulties of the position increased by the presence of animal matters and lime! In fact, scum liquor is surrounded by most unyielding conditions; not only

must it be added to the next *blow-up*, but added *at once*, or else fermentation sets in and it is decomposed.

It is evident, then, that the present operation of sugar refining is one of gradually increasing deterioration. On account of the necessity the refiner is under of adding impure saccharine solutions to such as are comparatively pure, he pursues a system of working in and in, most destructive to the staple of his operations; and were it not that treacle is a general receptacle for impurities, refineries would run themselves out, or be brought to a close.

This system of in and in work is one cause which prevents a refiner from knowing the exact per centage amount of produce yielded by any given sugar; but there is another, namely, that involved by the use of magma liquor, which necessarily confuses the weighed results.

Refiners have been thought extremely tenacious in guarding against the disclosure of the per centage amount of sugar obtained, and doubtless that tendency exists; but, in strict truth, they cannot tell, so much is one operation involved in those which precede and follow.

It is not here asserted that a refiner cannot, by taking the average of a considerable period, obtain a general result of his produce; but to ascertain the amount of pure sugar obtained from any given sample, is, by the present refinery operation, impossible.

To illustrate the unsatisfactory looseness of the deductions which are sometimes made from inadequate data furnished by the refining operation, the following narrative will suffice. I was shown a kind of laboratory-book belonging to a London refiner, and in which the assertion was made, that about 82 pounds of white sugar out of 112 of raw material were obtained in his establishment: no experiments were mentioned, but merely the dictum laid down. I subsequently examined the boiler as to the means by which the deduction was arrived at; when it appeared that the deduction was not proved but merely assumed, as being in accordance with certain experiments made,—not in the refinery, but in the laboratory. The process of liquoring was not adopted in these experiments, but the sugar in the green state was assumed to have a certain per centage of coloring matter. “After all,” remarked the boiler very candidly, “I never could see how this result of 82 pounds was ever arrived at; and I consider the result of our best working to be more like 75 or 76.”

There is a considerable affectation prevalent among refiners of considering their manufacture absolutely perfect. A very large London refiner would lead the world to believe that he does not produce in his refinery any bas-

tards. He does not *sell* any, it is true, considering it more profitable to purify this product to the extent of enabling it to be converted into pieces. This same refiner also entertains the notion that he absolutely extracts *all* the sugar out of his scum; whereas I know, on authority that is unquestionable, that he sells the scum of one of his refineries alone for £5 per week to a party who converts it into bastards and treacle.

Most refiners have an instinctive horror of owning to the employment of blood. I once was taken to a London sugar-house, which has the credit of being considerably in advance of others in the general economy of the whole operation. Amongst other matters, I was informed that no blood was used. A personal examination of the blow-up pan, however, during an operation, corrected the error fully to the satisfaction of myself and friends. Having viewed attentively every part of this refinery, I found that the only difference between it and many others which I had seen consisted in the remarkable cleanliness of the floors.

The Treatment of Charcoal.—In London many refiners do not re-burn their own bone-black; indeed some refiners possess none of their own, but rent the material at a stated price. Others, however, burn their charcoal, even in London: in the provinces the plan is universal.

Although various processes have been tried for effecting the purification of animal charcoal without the aid of heat, they have all been discontinued, and the process of dry distillation is universally had recourse to. This process is now, I believe, universally conducted in cast-iron retorts, either exposed to the direct action of the fire, or set in a kind of oven, according to the most approved plan followed by manufacturers of coal-gas. Not only do retorts, when exposed to the direct agency of fire, become speedily destroyed by oxidation, but occasionally the bone-black is apt to be over-burned, whereas in the dome-set retorts this result cannot occur.

That over-burning of bone-black is injurious, has been recognized by many persons; but I am not aware that the reason of the injury has been explained. Indeed, to recognize the full amount of that injury, for the sake of making an extreme case, a special experiment is required, inasmuch as it is scarcely possible to apply the necessary amount of heat to a large retort, even when acted upon by the open fire. The first evidence of incipient over-burning of the bone-black is a peculiar glazed appearance which the grains possess, and which is probably a mere physical effect, and dependent on an increased density of mass, from the close approximation of particles. If the heat be pushed still further, the agency of the charcoal in the bone-black on the accompanying phosphates, liberates such an amount of phosphorus, that

any sugar-solution passed through such charcoal is completely spoiled. In the dome-set retorts, not even the first ill effect can well occur. The decolorizing effect of bone-black is much impaired if it be not washed free from sugar before burning: such is the fact, but the rationale is not understood.

During the process of burning, the bone-black gives off a great quantity of gaseous and condensable empyreumatic products, amongst which ammonia and Dippel's animal oil predominate; thus proving, if any evidence were wanted, how far the legitimate influence of the bone-black, as a mere decolorizing agent on sugar, has been interfered with by the presence of the animalized matters derived from blood. As soon as the evolution of volatile matter has ceased, the charcoal is raked out, with all due rapidity, into iron chests, and at once covered over, so that all ingress of air may be prevented, otherwise a large portion of the charcoal would be consumed.

As regards the theory of the action of bone-black, I confess myself entirely ignorant. Although cognizant of the various theories which have been mooted from time to time to explain this agency, I have met with no explanation yet that seems at all satisfactory, and want of time has prevented me from devoting any great attention to the matter.

I am far from convinced that the decolorizing agency is due to the charcoal of the bone-black in the least degree; and, so far as I have seen, the opinions of Messrs. Gwynne and Young, recorded in the *Annals of Medicine* for June, 1837, would appear to be correct—namely, that the agency is due to the 90 per cent. of phosphates of lime and ferruginous compounds with which the 10 per cent. of charcoal, in bone-black, are associated. I may mention, also, that this opinion is advocated by Mr. Fairrie, the refiner, of London, Liverpool, and Glasgow.

The chief defects of the present refinery operation are as follows:

1. The necessity of employing lime-water and blood.
2. The great accumulation of sweet waters arising from the washing of the charcoal.
3. The process of in-and-in workings.
4. The deteriorating influence of scum-liquor on solutions of sugar.

After the exposition which has already been given of the injurious agency of lime on sugar, little remains to be stated on that point here. Indeed, the amount of lime, as used in refineries, is but small, the earth never being employed in substance, but always as lime-water; hence the injurious agency of this alkaline earth is in a manner reduced to its practical minimum. Still, even under these circumstances, its ultimate destructive agency must be great, when it is considered that each successive syrup contains the lime not only of its own operation, but of many

preceding operations—modified only by the amount of lime removed (if any) by the bone-black filtration process.

The employment of blood, although effecting a considerable mechanical separation of one set of impurities, and thus enabling the liquor to pass rapidly through the filter-bags, nevertheless imparts not only red-coloring matter, but also the peculiar odorous compound of the blood. The coloring matter, it is true, can be removed by animal charcoal, but only, as must be evident, by diverting a certain amount of the efficacy of that substance from its more legitimate agency of removing the vegetable coloring matter of impure sugars. As to the odorous matter, it is never separated from the liquors to be evaporated, however bright they may be to the eye, and is only removed from the crystallized sugar by the processes of claying and liquoring, which force it into the syrup, and lastly into the treacle. Hence it is that the colored refinery products—pieces and bastards—although somewhat like Muscovado sugar in appearance, possess a most offensive smell. The colored sugars resulting from a refinery process, where no blood is used, cannot be distinguished from real Muscovado sugars—the best proof of the assertion that the peculiar smell of the two former is due to the odorous matter of blood. Another very strong proof of the presence of this odorous matter consists in the fact, that the condensed vacuum-pan steam evolves a peculiarly nauseous smell of perspiration. The perspiratory fluid of animals is well known to be evaporated from their blood; and, taking advantage of this fact, a celebrated writer on forensic medicine* has proposed to distinguish, medico legally, between the blood of brutes and the blood of man, by treating the suspected blood with sulphuric acid, when the peculiar perspiratory smell of the animal will be evolved.

The accumulation of sweet waters, arising from the various washings to which the charcoal must be subjected, is a very serious inconvenience, which is much felt, now that the effective bulk of bone-black has been so greatly increased beyond the *few inches* mentioned by Derosne, the patentee.

If these washings accumulate faster than the necessities for water in the future operations of blowing up, the inconvenience, not to say positive loss, to the sugar refiner will be great indeed.

The effect of in-and-in working, as producing a cumulative amount of destruction, has already been so fully enlarged upon that it need not be further adverted to, and a similar remark applies to the injurious agency of scum-liquor.

It now merely remains for me to add, that the process of employing sulphurous acid as

a precipitant for lead—used as a defecator—is equally good for refinery as for colonial operations, as I have proved most rigorously, both on the small scale and the large.

In conclusion, I beg here to thank the various gentlemen, far too numerous to mention, who have aided me in my investigations on sugars for the last eighteen months.

To Messrs. Evans, Thwaites & Co., refiners, of Cork, my acknowledgments are particularly due for the very prompt and liberal manner in which they responded to my application for leave to try the efficacy of my process in their house. The various experiments, conducted on the small scale, in a laboratory built by them for the occasion, having led to a successful trial on the large scale with most satisfactory results, their house has now been especially altered for the purpose of adapting it to the genius of the new process.*

SUGAR—ITS CULTIVATION, MANUFACTURE, AND COMMERCE.—VEGETABLE PRINCIPLES—PROPERTIES OF CANE-SUGAR—RE-AGENTS—MOLASSES, TREACLE—CANE-JUICE—SACCHARINE MATTER—ANALYSIS OF SUGAR-CANE, VARIETIES OF SUGAR MILLS—MOTIVE POWERS, ETC. BASED UPON DR. EVANS' WORK.—The extraction of sugar from its juices is said to be a purely chemical process, and of consequence most perfectly conducted wherever science prevails the most. In the manufactories of the metropolis it will be found in a much higher state of advance than in colonial work-houses and estates, however extensive.

In the United States we have been latterly convinced of this, and are taking those steps which are suggested. The extraordinary advance which Louisiana evinces, speaks volumes for this better spirit. Her liberal planters pause at no pains or expense; many of them are ever engaged in prosecuting their experimental researches; the progress is continual, and the effort unremitting. Were it not invidious, we could call by name many of these planters; some of them have sent agents to Europe to examine machinery and movements. The expense of improvements and apparatus is the last consideration; the great point is *perfection*.

Oxygen, hydrogen, nitrogen and carbon are the chemical constituents of all substances produced by the vital action of plants. Thus the water taken up by the roots and carried

* Since the period when the above was printed, my coadjutors have become far too numerous for special acknowledgment. I must not, however, omit the name of Messrs. Shears, of Bankside, who have fitted up a model house on their premises for demonstrating the new operation, and to whom I am indebted for many valuable suggestions as regards the mechanism of my process.

into the leaves, as sap, to be exhaled, to liberate oxygen, etc., thus changing its character, to return fit for the nutrition of the plant, contains two of these elements. "All the proximate principles which enter into the structure of a plant, are formed by a blending together of their elementary bodies in various proportions."

If in any of these compounds nitrogen be present, it is said to be *azotized*; if otherwise, *non-azotized*. Thus dextrine, starch, cellulose, lignin, or woody fibre, gums, mucilage, and *sugar*, are of the latter class.

But sugar is also a product of the animal kingdom; thus, the sugar of milk, of diseased urine, etc. Vegetable sugar is that of the cane of fruits, of manna, etc. The *glucose*, or fruit sugar, is uncrystallizable, undergoes rapid vinous fermentation, and has a peculiar combination of elements. *Mannite*, the ingredient of manna, is contained in the juice of plants in New South Wales, and certain sea-weeds—does not ferment. The *cane-sugar* consists of carbon, 12 atoms; hydrogen, 10 atoms; oxygen, 10 atoms; and 1 atom water. Sugar-cane absorbs readily the chloride of sodium and potassium, and probably the sulphates. Where these salts abound in soils the sugar will possess purgative qualities. The sodium, or common salt, forms a deliquescent compound, and thus the difficulty of crystallizing sugar made from saline soils.

Cane-sugar may also be obtained from many grasses, maize, guinea corn, roots of the carrot, beet, &c.; from pumpkins and melons, from the sap of the palm, &c. When pure, it is solid, transparent, and colorless; crystals, rhomboidal prisms; but subject to modification; soluble in half its weight of water at 60°, and 1.5 at boiling point, sparingly in cold alcohol; specific gravity, 1,600, water being 1,000; at 300° it melts, and forms an uncrystallized mass, which, on a much greater application of heat, becomes uncrystallizable; at 500° the black substance *caramel* is formed.

The sugar-cane is cultivated chiefly in the West Indies, Brazil, Louisiana, and the Mauritius, and is of the following chief varieties:

1. Common or Creole cane, so called from being introduced from the new world.
2. Yellow Bourbon.
3. Yellow Otaheite.
4. Otaheite, with purple bands.
5. Purple Otaheite.
6. Ribbon cane.

The *Muscovado sugar* is all such as contains any foreign matters, as silica, phosphate of lime, carbonate of lime, organic matter, potash; being the state of all colonial and plantation sugars.

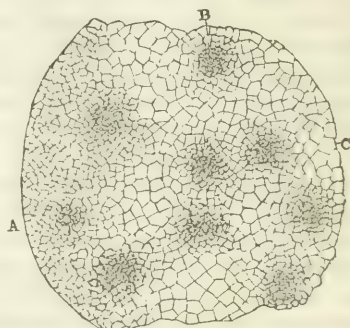
Molasses is the mother liquor after the crystallization of cane-sugar. It contains

pure sugar and impurities. Twenty pounds Louisiana molasses gave 15 lbs. of the former, and 5 of the latter, including water.

Treacle is a late product of the refinery; it does not crystallize; is of a dark brown color; specific gravity, 1380–1400.

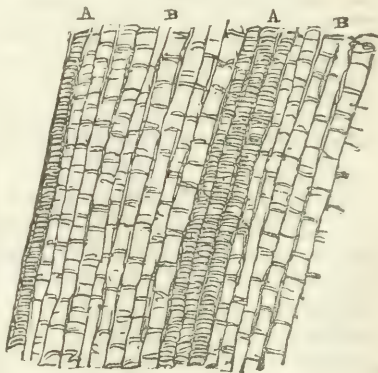
The plant is perennial. The stem, cut horizontally, is shown in figure 1, and when examined by a microscope, shows a series of hexagonal cells, formed of delicate tissue and closed laterally above and below, each being entirely independent. A series of vessels inclosed in woody sheaths is also found, and best shown by a vertical section.

Fig. 1.



Thus, A A, *fig. 2*, are the vessels; B B, the cells; the former being formed of rings, and running from one extremity to the other of the joint, forming a lacework. Here are situated the knots. The eyes, or germinal spots of the plant are found here. The vessels contain a crude sap or fluid; the cells a solution of pure sugar and water. Between these there would appear to be a continual communication. The sugar cells supply nourishment to the rapidly vegetating cane, but this supply is discontinued on maturity.

Fig. 2.



Cane-juice is the expressed product of crushed cane, and of consequence consists of other substances besides sugar and water. It is first opaque, frothy, and of a yellowish green or grayish; sweet taste; acid reaction on test-paper, and separable by filtration into a transparent yellow fluid, and a dark green fecula. This fecula or scum, when separated by heat and lime, consists of wax 7.5, green matter, 1.3, albumen and wood 3.4, bi-phosphate of lime 0.5, silica 2.1, and water. The transparent liquid consists of water, sugar, saline matters, coloring principles, etc.

The experiments of Peligot and Evans on filtered cane-juice prove—

1. That cane-juice, without the addition of any foreign matter, when its water is evaporated at the ordinary temperature of the atmosphere, does not produce crystals of sugar.

2. That when it is exposed to a temperature a little below that of boiling water for the purpose of concentration, crystallization of a part, but not of the whole, of its sugar takes place.

3. That on the addition of alcohol to the concentrated syrup, nearly the whole of it is converted into a solid crystalline mass on farther evaporation.

Filtered cane-juice at rest loses its transparency, becomes viscid, and ferments. Boiled cane-juice changes with great rapidity its chemical character. The casein which it contains is insoluble in pure water; acidulated, or rendered alkaline, by vegetable acids or potash, soda, or lime, not in excess, the casein may be separated. Without this sepa-

ration crystallization is imperfect, and fermentation ensues. Sulphurous acid, on a base of zinc or lime, will prevent the latter action, but ought never to be required. The saline matter of cane-juice is 2 to 4 parts in 1000.

Dr. Evans, writing of the West Indies, says: "There are lands on which the canes do not seem to ripen, owing to the saline soil stimulating too large a growth, and preventing a deposit of sugar in the cells. Drainage is a chief remedy here. A luxuriant vegetation followed by continued drought, checks the growth, and the plant shows a disposition, as it is called, to arrow. This drought occurring when the canes have attained ordinary growth, is beneficial.

The evil effects of *drought* are thus explained:

In consequence of injury that the structure of the stem has suffered, the liquid contents of the different organs have been mingled, the azotized matters have acted as fermentative agents, and the sugar, in whole or in part, has been converted into gum, glucose, and lactic acid, the one or the other of them predominating in different cases.*

That of early frost. The frost causes an expansion of the fluids, and a rupture of the organs which contain them. An intermixture of the saccharine and nitrogenized principles consequently ensues. Should the frost continue, no evil results are observed, for at such a temperature catalysis is prevented; but should a thaw succeed, the cane-juice becomes viscid and mucilaginous, the syrups resulting from it will not crystallize, and the only use to which they can be applied is that of distillation.

TABLE REPRESENTING THE SPECIFIC GRAVITY OF SOLUTIONS OF SUGAR OF VARIOUS STRENGTHS.

Specific gravity	Sugar in 100 parts	Specific gravity	Sugar in 100 parts	Specific gravity	Sugar in 100 parts	Specific gravity	Sugar in 100 parts	Specific gravity	Sugar in 100 parts
1000.....	.00	1057.....	.14	1118.....	.28	1187.....	.42	1263.....	.56
1004.....	.01	1062.....	.15	1123.....	.29	1193.....	.43	1268.....	.57
1008.....	.02	1066.....	.16	1128.....	.30	1199.....	.44	1273.....	.58
1012.....	.03	1069.....	.17	1133.....	.31	1204.....	.45	1279.....	.59
1016.....	.04	1073.....	.18	1137.....	.32	1209.....	.46	1284.....	.60
1020.....	.05	1077.....	.19	1142.....	.33	1215.....	.47	1289.....	.61
1024.....	.06	1081.....	.20	1147.....	.34	1220.....	.48	1295.....	.62
1028.....	.07	1085.....	.21	1152.....	.35	1225.....	.49	1301.....	.63
1032.....	.08	1090.....	.22	1157.....	.36	1230.....	.50	1307.....	.64
1036.....	.09	1095.....	.23	1162.....	.37	1235.....	.51	1312.....	.65
1040.....	.10	1100.....	.24	1167.....	.38	1241.....	.52	1317.....	.66
1045.....	.11	1104.....	.25	1172.....	.39	1246.....	.53	1321.....	.666
1049.....	.12	1109.....	.26	1177.....	.40	1252.....	.54	—	—
1053.....	.13	1113.....	.27	1182.....	.41	1257.....	.55	—	—

TABLE OF THE DENSITY OF SOLUTIONS OF SUGAR, ACCORDING TO THE SCALE OF BEAUME.

Degrees of density	Sugar in 100 parts	Degrees of density	Sugar in 100 parts	Degrees of density	Sugar in 100 parts	Degrees of density	Sugar in 100 parts	Degrees of density	Sugar in 100 parts
1.....	.018	8.....	.144	15.....	.276	22.....	.406	29.....	.541
2.....	.035	9.....	.163	16.....	.294	23.....	.424	30.....	.560
3.....	.052	10.....	.182	17.....	.315	24.....	.443	31.....	.580
4.....	.070	11.....	.200	18.....	.334	25.....	.462	32.....	.601
5.....	.087	12.....	.218	19.....	.352	26.....	.481	33.....	.622
6.....	.104	13.....	.237	20.....	.370	27.....	.500	34.....	.644
7.....	.124	14.....	.256	21.....	.388	28.....	.521	35.....	.666

* Dr. Evans's Treatise on Sugar, pp. 62, 235.

The method usually resorted to by chemists for ascertaining the amount of sugar contained in a given solution, is either the following, or one closely resembling it. Presuming that cane-juice is the saccharine fluid to be examined, a weighed quantity of it is filtered, and a portion of very strong alcohol, equal to half its bulk, is added to it; a flocculent precipitate immediately takes place, which is removed by a renewed filtration. The liquid is then placed under the receiver of an air-pump, into which is, at the same

time, introduced a vessel containing a quantity of perfectly caustic lime. On the air being exhausted, the water, in consequence of the affinity which its vapor and the lime have for each other, is evaporated, while the alcohol remains. In the course of ten days or a fortnight, the alcohol becomes too strong to retain the sugar in solution, and this substance is consequently precipitated. The precipitate is then to be washed in strong alcohol, and, having been carefully dried, it may be weighed, and its amount ascertained.

ANALYSIS OF THE ASHES OF THE SUGAR-CANE.

	1	2	3	4	5	6	7	8	9	10	11	12
Silica.....	45.97	42.90	46.46	41.37	46.48	50.00	45.13	17.64	26.38	52.20	48.73	54.59
Phosphoric acid.....	3.76	7.99	8.23	4.59	8.16	6.56	4.88	7.37	6.20	13.04	2.90	8.01
Sulphuric acid.....	6.66	10.94	4.65	10.93	7.52	6.40	7.74	7.97	6.08	3.31	5.35	1.93
Lime.....	9.16	13.20	8.91	9.11	5.78	5.09	4.49	2.34	5.87	10.64	11.62	14.36
Magnesia.....	3.66	9.88	4.50	6.92	15.61	13.01	11.90	3.93	5.48	5.63	5.61	5.30
Potassa.....	25.50	12.01	10.63	15.99	11.93	13.69	16.97	32.93	31.21	10.09	7.46	11.14
Soda.....	—	1.39	—	—	0.57	1.33	1.64	—	—	0.80	—	—
Chloride potassium.....	3.27	—	7.41	8.96	—	—	—	10.70	11.14	—	16.06	0.84
Chloride sodium.....	2.02	1.69	9.21	2.13	3.95	3.92	7.25	17.12	7.64	4.29	2.27	3.83

The above results were condensed by Professor Shepard, of South Carolina, from the results of Mr. Stenhouse. Professor S. remarks:

Nos. 1, 2, 3 and 4, were very fine full-grown canes from Trinidad, consisting of stalks and leaves, but without the roots. Nos. 5, 6 and 7, were similar canes from Berbice; No. 8 from Demarara; No. 9, of full-grown canes, but with few leaves, from the island of Grenada; No. 10 from Trelawny, Jamaica, consisting of transparent canes in full blossom, grown about six miles from the sea, and manured with cattle dung; No. 11, of transparent canes, from St. James', Jamaica, growing about two hundred yards from the sea, being old ratoons, and also manured with cattle-dung; No. 12, young, transparent canes, three and a half miles from the sea, and manured with cattle-dung, guano and marl.

From these analyses, it appears that the cane for successful cultivation requires a very large quantity of silicate of potassa, and also a considerable amount of the phosphates. Few cultivated plants, except the cerealia, require so much. Wheat, or any of the cereals, necessarily cause the removal of a portion of the valuable inorganic constituents of the soil, such as the alkalies, phosphates, &c., which can only be returned to it indirectly: but with sugar, the case is quite otherwise. Sugar is a purely organic substance, consisting of carbon and the elements of water, all which can be derived from the atmosphere, and contains neither alkalies nor phosphates; so that if the ashes of the canes were carefully collected and returned to the soil in an available state, there is no reason why cane might not be grown upon the same lands almost indefinitely.

In the West Indies, where wood is scarce, the crushed canes are employed as fuel, under

the coppers of the boiling-house, to concentrate the syrup, and as the heat required is great, a large amount of the silica and the alkalies present is converted into a hard, insoluble glass, which, in this form being useless, is thrown away. We can, therefore, readily understand the reason of the rapid exhaustion of their sugar-lands, and the comparatively slow wearing out of those in Louisiana, where, from the abundance of wood, the cane-trash is never thus employed, and where, in addition to the inorganic ingredients of the cane, the soil receives (at least where the plantership is what it ought to be) the almost equally valuable mineral constituents of the wood itself.

Having examined the physiology and structure, varieties and chemical ingredients of cane, the next step will be to determine the mechanical means used for the extraction of its juices.

The fluid contents of a cane, according to Evans, contain *ninety per cent.* of the entire structure of the stem.

The Sugar Mill.—The mode of expression is by rollers. M. Duprez, an agent of the French government, having experimented on the canes in Guadalupe, found the quantity of juice in every 100 pounds crushed—

1. By mills having horizontal rollers; the motive power not stated.....61.2 lbs.
2. By mills; motive power, steam.....60.9
3. By mills; motive power, wind and steam.....59.3
4. By mills having vertical rollers.....59.2
5. By mills; motive power, cattle.....58.5
6. By mills; motive power, wind*.....56.4

The average of all these experiments being 56 per cent. only. The result of M. Avequin on Louisiana cane was 50 per cent. Mr. Thompson, of Jamaica, states 50 per cent. as the average throughout the island of Martin-

* Dr. Evans's Treatise on Sugar, p. 75.

ique. Dr. Evans ventures 47 per cent. as the lowest, 61 as the highest, in the West Indies. A mill in Madeira gave 47.5, and 70.2 of juice.

The mill was a small one, made at Aberdeen about two years previously, on the ordinary principle, with horizontal rollers, and the motive power was cattle. During the experiment which furnished the last and largest result, the rollers were braced more than usually tight, and the number of canes introduced at a time were five or six, being the utmost that the strength of the cattle would admit of. The canes were squeezed once only; indeed, the megass was too much lacerated to admit of its being passed between the rollers a second time with advantage.

These low results, Dr. Evans supposes, would compare favorably with those taken carefully throughout all the British colonies for the following seasons:

1. Because we can scarcely expect to find superiority, or even equality, where no attempts have been made to obtain it.

2. That when we are ignorant that a deficiency exists, little pains will be bestowed to correct it.

3. When, from the force of circumstances, more attention is paid to the obtaining of an abundant supply of megass, to serve as fuel for the concentration of the cane-juice of the following year, than I, at least, have ever seen evinced for obtaining a full and adequate supply of juice for the present. *

The Hydraulic Press.—This has been proposed to substitute the mill, and introduced into Jamaica and St. Vincent, but the results are not yet given. It was even suggested that the canes, cut into thin slices and dried, be forwarded to Europe for more perfect manufacture. The trial from Guadalupe failed; the canes undergoing in the passage decomposition.

A new patent for extracting juice was lately taken out by M. Michiel. It consists in cutting the canes into thin slices, and submitting them to the action of lime and water, to coagulate and render insoluble their nitrogenized constituents. This, it is thought, will extract the whole of the saccharine matter. Doubts are expressed as to its practicability, economy and dispatch, for large estates.

To give the greatest efficiency to the sugar-mill, Dr. Evans suggests the following rules, by means of which he thinks 20 per cent. more of juice may be obtained than is usually, without additional cost.

1. The rollers should be made to approximate as closely as the work which they have to perform will admit of. In mills, in which the rollers observe a vertical direction, the space between the first and second should scarcely, if at all, exceed one-fourth of an inch, while a distance of one-sixth of an inch is the most that should be allowed between

the second and third. When they are placed horizontally, the upper one ought to observe a space of one-fifth to one-fourth of an inch from the two lower. These distances can never, perhaps, be accurately given in every case, but the requisite degree of bracing should always be strictly attended to.

2. The velocity of the rollers should be rendered as uniform as possible, not by diminishing the amount of motive power, but by a carefully regulated supply of canes.

3. The canes, when thrown upon the feeding board, should be upon the same plane, and never suffered to cross each other, otherwise the motion of the rollers will be checked, and the canes will be submitted to unequal pressure.

4. The megass should invariably be re-passed between the rollers, so as to extract, as much as possible, the juice which still remains in it.

When the canes are rich, and their juice of considerable density, the megass should be sprinkled with a little water, or, where it is practicable, exposed to the action of steam before it is submitted to the pressure; but when the canes are large, green and watery, this may be dispensed with.*

The *three-roller mill* has the disadvantage of re-absorbing a part of the cane-juice in the spongy megass, and a loss of power. Those with *five rollers* have been used in Cuba, Bourbon and the Mauritius, which gave 70 per cent., a great increase of motive power being, however, necessary. *Four-roller mills*, two below and two above, requiring little more motive power than the three-roller, have given 70 to 75 per cent. of juice.

The motive power applied to mills is animal, wind, water and steam. In many of the English colonies *mules* are used, but are considered bad economy. *Wind* is chiefly applied in Barbadoes, with its usual advantages and disadvantages. *Water* has been little used, steam being the usual agent.

Defecation or Clarification—Action of Lime and Heat—Use of Nutgalls, Sulphate of Zinc, Alum, Diacetate of Lead, Elm-bark, &c.—Filters—Evaporation—Animal Charcoal—Concentration of Syrup—Vacuum Processes—High and Low Temperature—Proof Acids—Alkaline, Albuminous Syrups—Smear—Coolers—Skipping or Striking—Potting—Theory of Crystallization—Curing Houses—Statistics of Sugar Plantations and Records—Condition of the British and West Indies—Their Relief—Abolitionism.—In our last paper we examined into the physical and chemical constituents of sugar-cane and its various products, the means of extracting the juices by machinery, and the merits of different processes. We

* Evans on Sugar, p. 77.

* Evans on Sugar, pp. 881,2.

now proceed to other heads of our general subject.

We have received a letter from an intelligent Louisiana sugar planter now in Europe, who contributed to the Commercial Review an inestimable article upon the manufacture of sugar. In reply to our inquiries, he remarks, "I have notes in Paris of value, comprising references to what I have read, and statements of what I have seen and heard on a subject so interesting to me as the sugar culture and manufacture, and have collected everything of any value that has ever been published on the subject. I think I shall be able to give you, on my return, another article on sugar, which will interest our planters."

We also received from Mr. Valcour Aime, one of our most liberal and extensive planters, an interesting letter, which, we are sure, in so good a cause, he will excuse us for making public. It will be found in another place in this work.

But we resume our labors, making, as in our last paper, the valuable work of Dr. Evans, of London, the basis of observations. It is the latest scientific treatise upon the subject, and important, as giving the results on the English plantations, and in the manufactories of the metropolis. As these papers proceed, we shall examine the results in all other countries, as well as in our own.

The *defecation*, or *clarification*, of cane-juice is the first process after its extraction, though in many of the English colonies it is dispensed with. Where it is conducted, the juice is received from the mill into cisterns, or cold receivers of copper or wood, lined with sheet lead, to remain there until the clarifiers are ready. These receivers are, however, being abandoned, as Dr. Evans tells us, and the juice passes directly to its destination.

The *clarifiers* are shallow copper pans, of circular form—flat, or arched slightly upward at bottom, and capable of containing 250 to 500 gallons. Each is suspended over a different fire-place, supplied with dampers to regulate the combustion of fuel, &c,

When the juice has attained a sufficient temperature, say 140°, lime is applied. It is usually slaked by water; clarified cane-juice or syrup being sometimes previously admixed, it is thought, with good results. The quantity of lime used is regulated by experiment on the juice, in wine-glasses, in each of which different quantities of it are introduced.

After this application, the cane-juice is well stirred, and heated gradually to boiling, or until a scum appears upon the top, which cracks and breaks, exposing the clear liquid. The fire is then extinguished, and the juice left "to remain undisturbed until the remaining feculencies have subsided." It is

then allowed to pass out into the grand copper receiver. A *double clarification* is sometimes resorted to, one by heat only, and the other with heat and lime. *Filtration* by mechanical means is frequently practised as a previous step.

The action of heat upon cane-juice is to coagulate and render insoluble the vegetable albumen involved with the flocculent particles. That of lime is more difficult of explanation. If tried in a glass, it changes the color to bright yellow, separating the liquid into a precipitate of impurities, and the clear juice.

Lime saturates any free acid it may meet with in the cane-juice; it sets free a small quantity of potash; it forms an insoluble compound with a portion of the casein, which is either precipitated, or which rises to the surface in the scum; it combines with three times its weight of sugar—the substance produced being very sparingly soluble in cold, and still less so in hot water; it deepens the color of the juice.

When the cane-juice contains a small quantity of lactic and acetic acids, an event which occurs more frequently now than formerly, owing to the want of a sufficiency of labor to hasten the stages of the manufacture, the lime combines with those acids, and forms uncrystallizable salts, which preserve a portion of the sugar with which they may be in contact in a fluid state.

Should a small quantity of glucose be present in the syrup, which is always the case when concentration has been conducted as it now is in the colonies, the lime, probably assisted by a small quantity of potash which has been set free, speedily converts it into a glucic acid; and the glucates, when formed by the prolonged action of the heat, are as quickly converted into melasينات of the same basis, and the whole syrup is thus rendered of a dark brown or black color.

Cane-juice, defecated as judiciously as possible by means of lime and the application of heat, throws down a farther precipitate on the addition of a little diacetate of lead.*

The lime should be as pure as possible—being burnt, and slaked immediately after with boiling water, and strained through a sieve.

Before applying lime, the juice is tested with *litmus* paper, which is changed by it from blue to reddish-purple. At 130° milk of lime is applied, cautiously at first, and then adding to the quantity until no farther reaction upon the litmus is observed. The heat is then applied till perfect ebullition for two or three minutes. If the clarifier contains 300 gallons, the first proportions of lime will be from four to six ounces. If the quantity of lime be not sufficient, the grains

* Evans, pp. 97, 98.

will be light and small—if too great complexion of the sugar will be darker, but bolder grains. The vessels should always be of copper.

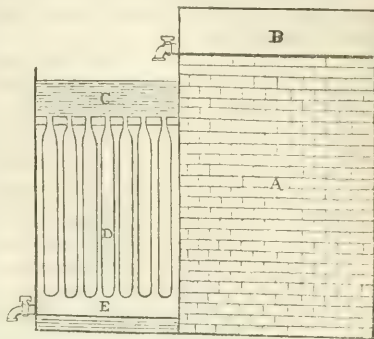
There are other chemical modes of separating sugar from its impurities, each with different degrees of merit and demerit. That by *nut-galls*, it is said, may be followed to advantage when the juice is viscid, without increased acidity. When the *sulphate of zinc* is used, the defecation is very complete; but being a virulent poison, the process is attended with danger. Twelve ounces are applied to 300 gallons cane-juice, and milk of lime to render neutral. Bag filters are then used for straining. *Alum* possesses great advantages, together with the evil that it leaves sulphate of potash, or nitre, combined with the juice, which is deleterious. The *sulphate of alumina* possesses extraordinary advantages over other chemicals. It leaves the liquor colorless, and the sugar beautiful. It is used in the manufacture of beet root sugar in France. The process is thus explained by Dr. Evans:

This substance is employed in the way just described for alum. It does not contain potash, but is composed of alumina and sulphuric acid only. The proportions required are about one pound to every 100 gallons of juice; but twice or even thrice that quantity may be given with advantage. We must be careful, however, to neutralize the liquor, thus treated, as quickly as possible with milk of lime, otherwise some risk would be incurred of converting a portion of the sugar into glucose. Every pound of the sulphate of alumina will require about seven or eight ounces of caustic lime to effect its decomposition; but a slightly additional quantity may be given in all cases, beyond what is merely necessary, although the liquor may thereby be rendered slightly alkaline.

Sulphuric acid is advised, either upon juice that is viscid, or, in the technical phrase, which is burnt. *Diacetate of lead* was proposed in England, and a patent taken out for its use some years ago. But a double clarification is necessary, with, of course, loss of time and labor. It was tried in the English colonies, and the resulting sugar, to some extent from mismanagement, produced serious effects upon all who used it. *Wild elm bark* has been successfully resorted to in Martinique and Guadaloupe.

Subsequent *filtration* of cane-juice after its defecation is commended for several reasons—that is, if it has been allowed to boil. 1. Less trouble in regulating temperature. 2. Ebullition, which is essential to the complete coagulation of the albumen. 3. Economy of time, the liquid running immediately after boiling into the filters. 4. The increase in quantity of liquor. 5. Complete separation of solids, and more transparent juice.

Filters which are used for mere mechanical impurities, are strong calico bags, eighteen inches wide, and three to five feet long. These bags are introduced into others of canvas, of the same length, only six inches wide. Tubes then run from the cistern to the mouths of the bags, around which they are tightly closed.



Thus, in the annexed diagram, B is the clarifier; C is an upper cistern; D shows the case of filters attached to C; E is a lower cistern, receiving filtered liquor and discharging it into the copper, if possible. If the juice has not been previously filtered, a wire sieve should be placed in C.*

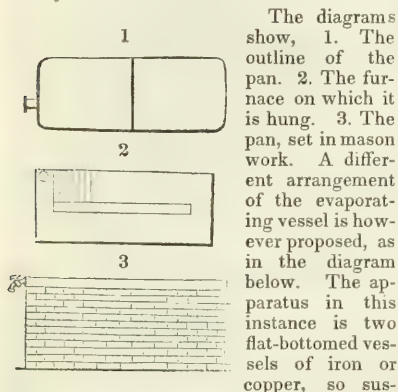
The process of clarification being completed, the next in order is *evaporation*, or reduction to the state of syrup.

The liquid has passed into the coppers—hollow spheres—arranged in order on the surface, and over one fire. This method was used in India from all antiquity. In these coppers the liquid undergoes renewed defecation, evaporation, and concentration, simultaneously. Dr. Evans shows that to do these effectually by this means is impossible, and that injury must arise in some of the processes. The plan would not have been so long retained in the colonies had there been a demand for finer sugars. To remedy its evils, the following modifications and changes are suggested:

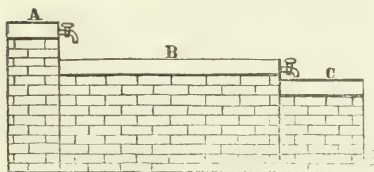
1. Remove the *teache*; place the fire under the second copper; let the four coppers constitute exclusively the evaporating apparatus. The juice passes first into the one most distant from the fire, and successively into the others, being skimmed and ladled until reaching the density required. Pass it then into charcoal filters, or into a cistern prepared to receive it, or into the concentrating vessel. This process would not increase the expense of machinery, but megass fuel must be used to pass the flame far enough, and a greater expense of fuel and labor is required.

* Evans, p. 111.

2. Another modification is proposed. Substitute for the coppers a large flat-bottomed vessel of cast-iron or copper, oblong shape, with angles rounded off, divided into two equal apartments by a metal plate, containing a valve. The flame must come in contact with every part of the bottom, without touching the sides. One man may attend to the skimming, and no ladling is necessary. A large cock, attached to the extremity, allows the syrup to be drawn when sufficiently concentrated.



ended that the upper edge of the lower is on the same elevation as the bottom of the other. The same fire is applied to each. After undergoing evaporation in the upper, it is admitted into the lower. Thus A admits



the defecated juice. B is the upper, and C the lower evaporator. The bottoms of the evaporators should be corrugated, to increase the heating surface. In the manufacture of beet-sugar, steam has been chiefly used for evaporating heat. The only decided advantage which it is said to possess is the entire removal of the heat when required, without the trouble of dampening the fire, &c. It is by no means economical, from the loss of caloric and consumption of fuel.

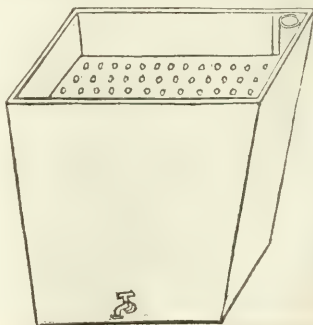
Dr. Evans remarks: "Evaporation has for its object the concentration of cane-juice to the consistency of a syrup of that degree of density best suited to the process which it has afterwards to undergo. Thus, if the syrup is to be filtered through animal charcoal previously to its concentration into sugar,

the density which is best suited for this purpose in 27° or 28° Beaumé; but if this operation is not to be performed, the evaporation may be prolonged until the syrup has acquired a density of 30° or 32°.

"Evaporation of cane-juice is best performed by ebullition at the ordinary atmospheric pressure. That degree of heat, at this stage, during which the sugar is largely diluted, when judiciously applied, so that the syrup may not be exposed to it longer than is absolutely necessary, is always beneficial, and often essentially necessary; for, otherwise, a larger portion of the nitrogenized matters, which have not been entirely removed, would be retained, and the crystallization of the sugar would be less complete."

The syrup being furnished in the state we left it, the producer may elect whether he will have a good, fine article of Muscovado, or an altogether superior and valuable product. In the latter case he will resort to *refining through charcoal*. This was first discovered in 1805, and in 1811 *animal charcoal* was found to possess the qualities desired in a much higher degree than vegetable. M. Derosne first applied it in France to sugar. The filters made by M. Dumont are in general use. Animal charcoal discharges the color, renders viscid syrups crystallizable, neutralizes acids, and removes excess of lime. It destroys the bitter and aromatic principles of vegetables, neutralizes poisons, &c. Vegetable charcoal may be made in a considerable degree to possess discoloring properties.

Let 30 lbs. of it, reduced to a fine powder, and then washed carefully in water slightly acidulated with muriatic acid, and afterward with pure water, be mixed with 70 lbs. of clay, in the form of a paste, and the whole be set by to dry; then let it be broken into small pieces, and calcined in a close iron vessel, at a white heat, for two hours. On its withdrawal it must be received in covered iron boxes, out of the contact of the air, or instantly cooled with aspersions of cold water, and reduced into a coarse powder. This forms an excellent substitute for animal charcoal, as it possesses considerable discoloring powers.



The *filter* of M. Dumont is shown in the cut. It is a quadrangular, pyramidal vessel, of wood, base uppermost. Its bottom is double, the upper one being basket-work or perforated metal. In the space between the two bottoms is placed a cock, and a metal tube rises from the same chamber. Over the false bottom is spread flannel, and placed powder

The *Peyron filter* is a different machine, and is applicable to other sugars than beet-root. It consists of a series of cylindrical vessels, each double-bottomed, like Dumont's, hermetically sealed at top. They are closely packed with charcoal, and into the upper part of the first vessel a tube is introduced, to admit syrup, descending with the aid of such pressure, as drives it through the charcoal. It then ascends into another vessel, by a pipe, &c., &c., as in the plate. The cylinders are six feet high, and three in diameter. They do rather more work than Dumont's, and act five or six days. When the charcoal is worn, boiling water is introduced, and by fermentation and effectual washing, it regains its power. The ordinary pancheon is, however, a very good filter.

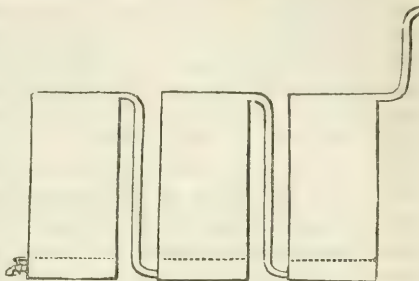
The fifth chapter of Dr. Evans' valuable and scientific work is employed upon the CONCENTRATION OF SYRUP.

The density of syrups and the relative amount of their constituents will be different, as they are filtered through animal charcoal or not. The temperature of the boiling point in the first instance will be 219 or 220° Fahr.; in the last case 224°—with greater temperature, changes in the composition of the sugar will result.

Sugar being soluble in one-half its weight of cold, and one-fifth its weight of boiling water, boiling syrup, thoroughly saturated, must necessarily deposit, on cooling, three-fifths of its sugar, the remaining two-fifths being held in solution by the water. The temperature required for ebullition, where there is one part of water to five of sugar, ranges from 238 to 248°, and even higher. These temperatures are injurious to sugar, as is shown by the experiments of M. Soubieran. The effects after long application of heat were: 1. Disappearance of cane sugar. 2. Appearance of fruit sugar, or glucose. 3. Production of carbonaceous powder and acids. Examining the refineries of Paris where a low temperature was used *in vacuo*, no such results were marked.

The usual plan of *concentration* being in the first copper, or *teache*, as it is called, has the advantage of rapidity, but the loss in the quantity and quality of sugar thereby, is estimated as high as ten per cent. Experiments have been made in Barbadoes to remedy the evils of intense heat on the *teache*. These consist in reducing the size of the vessel, so that the syrup may sooner leave it.

ed moistened charcoal—filling two-thirds of the vessel. Over the charcoal is a perforated cover. The hot syrup being poured in, the air and water, urged by its pressure, ascend the tube and escape. Four filters would be required, of the usual size, to make three hogsheds a day. The charcoal must be revived in three or four days.



A more important improvement would be to place the *teache* over a separate fire, and modify its form, viz., into a circular vessel, 45 inches in diameter, 14 or 15 inches deep—bottom convex within—a cock for drawing off concentrated syrup—the bottom alone to be exposed to the fire. "By these means the heat can be modified without interfering with the evaporation going on in the other vessels, and the bottom alone being exposed to the fire, there is much less danger of charring or burning the sugar than in the method now in use."*

In 1819, Mr. Howard, of England, took a patent for concentrating sugar *in vacuo*, to prevent the evils of high temperature. The principles is, that liquids boil at lower temperatures, as the pressure of the atmosphere is removed. Howard's apparatus was a globular vessel, of copper, inclosed in an iron or copper-jacket, the space between being filled with steam. The syrup was contained in the vessel. A tube admitted the escape of vapor, which was condensed by a jet of water. An air-pump attached produced the vacuum, &c. This apparatus has been improved by inserting a long coil of steam-piping into the vessel, and the condensation of vapor by a metallic worm. The vacuum vessel or pan requires a thermometer, to indicate the temperature of the liquid, and a barometer, to indicate the *degree of vacuum* or exhaustion. The steam-jacket greatly adds to the quantity of heating surface, as also does the steam-pipe. The diminished atmospheric pressure increases in similar ratio to the evaporating power. A fall of 27 inches in the barometer reduces the boiling point of water to 164.9°.

Thus is secured low temperature and rapidity. Speaking of the application of this invention to the English colonies, Dr. Evans remarks:—

"Unfortunately its general adoption, that is,

* Evans.

its introduction on every estate, will forever be impossible, in consequence of the great outlay required for the purchase of the apparatus, the skill required for its management, its liability to get out of order, and the necessity of more efficient workmen for its repairs than are as yet to be found in the colonies. The first of these objections is not so applicable to large estates as it is to small ones, as they offer a larger scope for getting the return of an adequate interest on the money so invested; and in such a case the others would be overcome by the necessity which would arise of obtaining that knowledge from abroad which is not to be had at home, were there an urgent demand for its supply.

"There can be no doubt that, on those estates which, from their extent and the fortunate position of their owners, will admit of the sinking a capital sufficient to obtain the vacuum apparatus, in conjunction with steam defecating and evaporating vessels, and a powerful and well-constructed mill, the ameliorations which would result, both in the quantity and quality of the products, obtained under a prudent and intelligent management, would fully compensate the expense incurred; but how few are the estates which at the present time are in such fortunate circumstances!"

A plan of concentrating syrup at a low temperature over the open fire, and at the ordinary atmospheric pressure, was submitted a few months ago by Augustus Gadesden to the West India proprietors. It consists of a copper pan in the form of the half of a hollow cylinder, in which are placed a number of metal rods, arranged for facilitating the evaporating surface. Connected with these is a wheel, continually revolving, and exposing to the atmosphere fresh portions of the heated syrup at each revolution. Dr. Evans remarks:

"I used a small concentrating vessel of this description in the Island of Madeira. The time required for taking off a strike containing fourteen moulds of fifty pounds each was two hours, and two hours and a half. The results were highly satisfactory: the temperature never exceeded 160°. It has also been in operation during two crops in Berbice, where its success appears to have answered every expectation formed of it. Such, however, has not been the case in the trials made of it in Barbadoes, for accounts from that island state that it occasioned a considerable amount of froth, and that the time occupied in taking off a skiff was longer than was contemplated.

"In Berbice the pan was worked by an intelligent boiler-man sent out from this country for the purpose; in the latter instance its management was intrusted to the sugar boilers of the colony.

"The frothing, no doubt, was owing to the incomplete defecation of the cane-juice, and

the non-separation of the whole of the albuminous principles; if so, the addition of a drachm or two of washed butter would in all probability have proved a remedy."

When the syrup has arrived at a degree of concentration sufficient for the deposition of three-fifths of the sugar it contains, it presents an appearance which is called "*proof*." When it has reached this point, the syrup "is clear and transparent, it does not mount or rise in foam or froth, the ebullition is quick and sharp, the bubbles succeeding each other with rapidity, and bursting as they rise. As the inspissation advances, the syrup is seen to run from the edge of the skimmer in a thin, broad sheet, which separates as if it were cut sharply off with a pair of scissors, and never hangs down in long adhesive strings; it communicates to the eye the sensation of being a sharp, short, crispy fluid, possessing little tenacity or viscosity, and the sound of its ebullition communicates to the ear a similar idea."

A small quantity taken at this time between the forefinger and thumb, and allowed to cool, shows, on being separated,

"1. That it divides into two small portions or drops, the lower one of which, attached to the thumb, is larger than that adhering to the finger.

"2. That the portions become pretty nearly equal, and their division is effected by a wider separation of the finger and thumb.

"3. On a separation to the extent of half an inch, a slight column of syrup is produced which remains for an instant, and then breaks at its inferior extremity.

"4. A thin thread is produced on a somewhat wider separation, and on breaking the extremity curls up in the form of a hook, and gradually retracts to the portion which remains on the finger.

"5. On a still wider separation the thread on breaking is so thin as to be scarcely perceptible at its lower end, which is drawn upward in the form of a corkscrew."

Concentration at low temperatures may be so conducted as to dissipate all water, and produce perfectly dry sugar. This is said not to be desirable, nine per cent. of water being better to remain, when 100 pounds of the syrup will give 70 of sugar, and 30 pounds of molasses.

In concentration at low temperatures, a simultaneous production of crystals is secured. Hence it is desirable that the pan at first should have but little syrup, say one-third, and that it be added to as evaporation proceeds, and until incipient granulation—which is called "*spark*," from its reflection of light. At this point fresh syrup is added.

There are varieties of syrups besides pure, which are worthy of passing notice.

Acid Syrups are the result of diseased or injured canes; of souring of cane-juice; as deficient use of lime. They are not transpa-

rent; become darker on boiling; boiled at low temperature the color is little heightened; the product of molasses is greater, and crystallization more difficult.

"*Alkaline Syrups*, from excess of lime; sugar dark; grain good. Saline and viscid syrups; ebullition difficult, irregular and slow; bubbles do not readily burst; sugars produced, heavy, clammy and deliquescent. These syrups require a low temperature.

"*Albuminous Syrups*, from imperfect defecation; frothy in concentration; but butter or oil being added, the froth disappears without injuring the sugar, if carefully used.

"Where syrups refuse to granulate, but appear tenacious and adhesive, they are said to be a *smear*.

"The real nature of *smear* is not known. It probably depends upon some electro-chemical change excited in the molecules of the sugar during the process of concentration; but which, however, is not permanent, for syrups thus affected will, if left to themselves for some time, gradually become more and more crystalline; or, if they be diluted by the addition of a little water, and be again concentrated, granulation will ensue, as if nothing had previously happened. Generally their exposure in a heater for a short time to such a temperature as will preserve their fluidity, is sufficient to destroy this character, and to restore the crystalline powers of the sugar."

After the concentration of syrup in the *teache* it is passed in the English colonies directly into the *coolers*. The process of passing is called *skipping*, or striking, and is effected either by a ladle or copper skipper, fitted to receive the whole contents of the *teache*. The coolers are shallow wooden troughs, never exceeding one foot or sixteen inches in depth. The saccharine mass remains in the cooler until granulation has commenced, and is then removed to the hogshead. The system pursued of stirring the hot sugar in the coolers is declared by Dr. Evans to be destructive of crystallization, or perfect *curing*. Indeed, the whole process of potting and cooling as now practised, is reprobated as in the highest degree injurious. He argues that it tends to bind up with the sugar all the foreign elements which may be contained in the syrup—no little, even in the most skilful manufacture—and thus results the extraordinary melting away or *drainage*.

The three points to be attained from properly-concentrated syrup are—1, as large an amount of crystallization as possible; 2, as distinct and perfect a crystallization; 3, an easy separation of molasses. To perfect crystallization a perfect freedom of particles to move is necessary. The size and regularity of crystals depend upon the kind of evaporation. A rapid evaporation produces bad crystals.

"If these data be applied to the management of the syrup when skipped, such a plan

should be pursued that the syrup may be preserved in a state as free as possible from viscosity or tenacity, so as to admit of the easy approximation of the saccharine particles. For this purpose the contact of cold air, and particularly draughts of wind, should be avoided; and to prevent the too sudden or rapid cooling of the syrup, it should be exposed to a gentle and uniform temperature. That the crystals of the sugar may be perfect in form, distinct, and sufficiently large, the syrup should be placed in such a condition that the process of crystallization shall not be too hurried. It must, however, at the same time be borne in mind that the results of the operation must be regarded in a commercial rather than chemical point of view; consequently, that the time allowed for its performance should be no more than what is absolutely necessary; for in this, as in all other branches of manufacture, time is capital, and can be spared only at a certain sacrifice."

The concentrated syrup should be *skipped* into moulds of the hogshead size, and placed in a curing-house, of uniform temperature, free from currents of air. These moulds are of course fitted for passing off the molasses. The crystals, as they begin to form a crust on the top, should be separated by a wooden knife, and diffused gently through the mass, the operation being repeated once or twice. In twenty-four or thirty-six hours the plugs in the bottom of the moulds are to be removed. The temperature of 90° Fahrenheit is advised for the curing-house.

Another kind of vessel is advised for curing. Water-tight wooden chests, cubes, are to be placed side by side on the joists of the curing-house. The boxes to have false bottoms, two inches above the true, made of metal, minutely perforated, as of fine wire; this to be covered with coarse sacking. Spread on the sugar an inch thick; place a wooden cock between the bottoms. Fill the vessel with concentrated syrup, mixing the different skips, and leave in repose till a film of crystals appears—then occasional slight stirrings. Three or four days will be required for cooling where the vessels are large. When solid turn the cock or remove the plug.

Mr. Hague took out a patent for a similar process. A vacuum was formed between the two bottoms, and the air-pump suction introduced. The pressure of the atmosphere drove the molasses. Mr. Cooper improved upon the patent.

Drainage having ceased, art is applied to separate the molasses. The French beet-sugar makers applied a thick paste of clay to the surface of the sugar. The water of the clay exuding, passes through the sugar, and carries off the molasses. The dry clay is removed and renewed applications of the paste. This, though largely pursued, is de-

precated by the chemist. Dr. Evans advises the following improvement :

"Liquoring or syruing the sugar has for its object the replacing of the dark-colored molasses by another liquid of greater purity and of lighter color. The liquid to be selected for this purpose must be of a sufficient density to force the molasses before it as speedily as can be done with benefit ; it must be incapable of dissolving any portion of the sugar with which it comes in contact ; it must be much lighter in color than the molasses, to be displaced ; it must be innocuous to health ; and of such a nature as not to diminish the degree of sweetness of the entire mass.

"The only liquid with which we are acquainted that possesses all these qualifications, is a light-colored syrup, of such a density as to indicate its saturation at the temperature of the atmosphere."

The use of the syrup should be thus : remove the crust on the upper surface of the sugar, crushing it, and mixing with cold water to a paste—replace it upon the sugar. The syrup, however prepared, must be of the color of the sugar desired. It must be poured cold to the depth of two inches over the sugar prepared as above.

"In the colonies," says Dr. Evans, "it will seldom be necessary to 'syrup' more than once ; but if a still better color be required, the operation may be repeated. We may, if we choose, as I have already stated, by the use of very colorless syrup, produce a sugar equal to the best crushed lumps of the European refiner. It may, however, be doubted whether carrying the process of syruing to the extent practised in Europe will be, on the whole, profitable.

"Sugars which have undergone this process, even to a limited extent, are not improved in color only, but they are also much drier, less adhesive, their grain is more distinct, and they suffer no loss of weight from leakage during the voyage home."

Cane of the density 1073, or 10° Beaumé, at 60° temperature, is estimated to contain about 18 per cent. pure sugar, reaching in some instances as high as 22 per cent. In some of the most successful of the Barbadoes estates, three hogsheds of sugar, of the average of 15 cwt., with a proportionate quantity of molasses, are produced from a single acre of cane.

The last consideration connected with the manufacture of sugar, is the disposition of its drainage or molasses. In Jamaica nearly the whole of this is converted into rum ; and in other of the West Indies the same process is followed. At the present time we believe that the distillation of spirits is almost entirely neglected in Louisiana, though we recollect being informed by a very intelligent planter of that state, that some years ago, when molasses was at a very low price, he

converted the whole of his crop into rum, equal in quality to the West India, which sold in the New-Orleans market for one dollar per gallon.

West India molasses, from the little attention paid to it, is of very indifferent quality ; but on being carried to England it is converted into sugar of excellent quality.

The planters of Mauritius reboil, two or three times, their syrups with the same machinery used in other places. The boiling of molasses, it is said, is attended with small comparative expense. Where no change is contemplated in it, the planters, in the hope of increasing their sugar product, carry the point of concentration too far, to the disadvantage of that product.

The following summary, embracing nine leading principles in the cultivation and manufacture of sugar, is deduced from the reasonings of Dr. Evans, in his elaborate work. They should properly be committed to memory.

"1. The canes should be cultivated with a view not merely to their size and abundance, but we should, at the same time, by every means in our power, cause them to yield a juice as rich in saccharine matter and as free from all impurities as possible ; and to prevent the evils which would result from decomposition of the juice, when cut, the canes should be conveyed to the mill without loss of time.

"2. We should attempt to get from the canes the largest quantity of juice, either by improved mills, or by close attention to the fitting, bracing, feeding, &c., of those now in use—by sprinkling the megass with water, or by exposing it to steam, and by repassing it between the rollers.

"3. We must employ the best means in our power to defecate the cane juice, that is, to make this liquid approximate as near as we can to a solution of sugar and water only. Its speedy exposure to the action of a high temperature must be effected, and the greatest caution must be practised in the administration of the '*temper-lime*.'

"4. The defecated liquor should be evaporated to the density of 32° Beaumé, or to any other suitable degree, with the greatest expedition, care being taken at the same time that the carbonization of even the smallest particle of the sugar be prevented, by constantly preserving in the pan a depth of liquor sufficient to cover that part of it which is exposed to the fire.

"5. The object of filtering the liquor through animal charcoal is the more perfect removal from it of the albuminous principles, excess of lime, coloring matter, acidity, &c.

"6. That the concentration of the syrup to sugar proof should be effected with rapidity, and at the lowest temperature possible.

"7. That to promote an abundant and perfect crystallization, repose, moderate warmth, and an equable temperature are necessary; and to effect the better curing of the sugar, these two operations should be performed in the same vessel.

"8. That to induce the complete separation of the molasses, the sugar, when sufficiently cured, should be submitted to the process of liquoring.

"9. The molasses must be concentrated before any fermentative change shall have commenced." It is to be observed that the facts and principles of this and our preceding paper, are obtained from one conversant practically only with the systems of sugar manufacture in the English colonies. Most of them may be said, however, to be of universal application. How far they may, or may not, correspond with results, &c., in Louisiana, remains to be inquired in other numbers of our series. It is for the interest of sugar planters that they be conversant with everything going on in their art in any quarter of the world, and we desire to give this information. In farther aid of our labors, we are in expectation of a work from England, not yet published, and information which has been solicited from the East Indies.

Nor can we dismiss the subject without adverting to the condition of the English West India sugar colonies of the present day. On every hand the loudest, deepest, and most bitter complaints are sent up to the crown. It is impossible for these planters not to feel that they have been sacrificed to the blind and misguided efforts of religious enthusiasts and pseudo-philanthropists in England, subserving the purposes of interested politicians.* One of the most significant movements of the times, in this respect, must be considered the late one in parliament, calling for a committee of investigation into the state of the sugar colonies, and the grievous complaints of planters.† The mover of this resolution in

* We think that Gov. Hammond, in his letters on slavery, unanswerably shows that the politicians of England, to build up her East India possessions, and break down the United States, lent a willing ear to the sincere but deluded zealots of emancipation. We shall take occasion at an early day to present an article showing, upon every point, from the most reliable data, the actual condition of the British West Indies at this time, contrasted with former prosperity.

† "Nothing, the West Indian contends, has happened that might not have been confidently expected. During the period of slavery the want of labor was unknown, for the great majority of the population was compelled by law to work upon the plantations from day to day. But when that great social change, effected by 'The Emancipation Act,' took place, vast numbers of the freed people betook themselves to other occupations natural to a free community: many to desultory pursuits, squatting, and vagrancy; while those who continued to work, were, from the fewness of their number, and the urgent necessity for their services, enabled to dictate their own terms to their employers."—*Evans*.

his remarks took it for granted, that under the present system of labor adopted in these islands, and in the relationship subsisting between the whites and blacks, their ruin was inevitable, if not already achieved. What results may grow out of this commission of examination, the facts and statistics collected by them, and the testimony elicited, it is not hard to determine. Sure are we, that in the overwhelming evidence, fanaticism and folly will be unmasked, and stand rebuked before the world! May we not hope, too, that the influences will be benignantly felt in our own country in crushing those nefarious combinations, whose ends, whether perceived or not, are the same embarrassment and ruin! The condition, prospects and happiness—yea, even the lives of five millions of our population, white and black, are to be jeopardized in experiments, which philosophy, history, and all example denounce and deprecate. Phæton in the car of the sun is an admirable allegory of licentious abolitionism!

Dr. Evans complains of the loose manner in which the statistics of the West Indies are presented. Could a complete register be preserved of each of the islands, and, in fact, of the operations of the chief plantations, &c., much would result to the general benefit. Dissemination of knowledge of this kind would be of much advantage to Louisiana, and we have at all times endeavored to obtain it. A book is recommended on each estate, to record the chemical character of the soil, mode of cultivation pursued, nature and quantity of manure, weight of canes per acre—their description, whether plants, ratoons, age, &c., quantity of juice expressed by mill, density of that fluid, and other peculiarities, amount of sugar and molasses obtained, &c. To this may be added, kind of force employed, kind and consumption of fuel, expense of machinery and improvements, results in drainage, condition of slaves—ages, sex, health, longevity, diseases, fertility, expense of maintenance—kind and quantity of food, clothing, value of other products, value of slaves, &c., &c., &c. The preservation of these statistics on all the sugar estates of Louisiana, we commend, in the assurance that it will be attended with the best results. To which farther add, system of management of slaves, observations on weather, temperature, atmosphere, &c., &c. Nothing would please us more than to obtain such a paper, rigidly kept for one or more years from one of the largest estates in Louisiana, and we will endeavor to obtain something of the same kind from the West Indies, by way of contrast. Bearing upon these points are the following remarks of Dr. Evans:

"The sugar-cane has never been produced from seed in the West Indies; it is propagated by cuttings or germs. Plants so raised,

as is well known, become, in time, liable to deterioration and disease, and often entirely disappear.

"There is, indeed, much reason for believing that this change has already commenced in the Bourbon and Otabeite cane. Ought we not to inquire whether this disposition might not be checked, or whether a great improvement in the vigor of these plants might not be effected by a change of cuttings between colony and colony, or even between plantations in the same colony?"

"Or would it not be useful to obtain, occasionally, a new stock from the countries which originally produced them?"

"These, and other questions of equal importance, cannot be answered, for as yet they have attracted no attention."

Among the many schemes lately advanced for the relief of the British sugar-planters in their deplorable condition, one or two may be noted; but none of them, in our opinion, go to the bottom of the difficulty.

In consequence of the deficiency of force on the plantations, and difficulties of labor, it is proposed to establish *central factories*, like toll-mills, in the heart of different sugar regions, for the manufacture of the canes for the contiguous estates for miles around, these factories to be supported by British capital, and furnished with English laborers. Dr. Evans argues strongly against their practicability, from the nature of the country to be traversed in carrying the canes to mill—from the bulky nature of the canes—from the important consideration that all the canes from the estates arrive contemporaneously at maturity, and their speedy grinding, so necessary, could not be secured, etc. He finally shows that, all things together, the expense to the planter would very likely be greater than at present.

Another measure proposed has been to export to England the concreted cane-juice, to undergo manufacture there. It is thought that, with due modification, etc., of the British tariff, this plan would be greatly successful.

The following *restrictions* are chiefly complained of by the British sugar estates in their present embarrassment, and with them we close for the present:

1. Upon the importation of labor by "passenger acts," etc.
2. Upon improvement in the quality of product—nothing being allowed, until lately, to be exported superior to Muscovado.
3. Upon the exportation of the raw material, juice, etc., by the nature of the duties levied, and want of discrimination.
4. Upon the use of saccharine matter in England for various manufacturing purposes.
5. Restriction by navigation laws in favor of British ships.
6. Upon the importation into the colonies of the produce of foreign countries.
7. Upon the importation of colonial spirits into England.

SUGAR-CANE.—EXTRACT FROM A MEMOIRE ON THE STRUCTURE AND COMPOSITION OF THE SUGAR-CANE, BY M. PAYEN: TRANSLATED BY PROF. J. B. REYNOLDS, FROM THE COMPTES RENDUS, TOME XXVIII., MAY 21st. 1849. —In instituting some experimental researches on the sugar-cane, I have proposed to determine, by aid of the microscope and chemical analysis,

1st. The forms and the compositions of the tissues of this plant.

2d. The seat of the secretion of the sugar.

3d. The changes which age brings about in the forms and nature of the different parts of the tissue.

4th. The variations which the proximate principles experience at the same time.

Under this last head, I have been especially occupied with the parts of the stalk which are used in the sugar industry.

The solution of these questions, at which I have arrived, will offer some interest, notwithstanding the important labors, of which the sugar-cane has been the object, on the part of Proust, Derosne, and MM. Plagne, Avequin, Péligot, Dupuy, Hervy, and Casa-seca.

If we examine, from the surface to the centre, a section of the stalk, cut perpendicularly to its axis, at the epoch of its maturity, when it has become yellowish, and the leaves have fallen, we remark—

First, A superficial stratum adhering to the epidermis, formed of a kind of wax (*cérosie*) observed by MM. Plagne and Avequin, and studied by M. Dumas.*

Second, The cuticle, with the angular projections corresponding to the knots between the cells.

Third, The thick walls of the ipidermic cells;—lines of demarkation exist between the external walls of these cells; and their cavities are in free communication, either by a thin membrane, or by numerous small canals (*canalicules*) in the thickness of the walls.

Fourth, The cellular tissue, with thinner walls under the epidermis.

Fifth, A cellular tissue, with thick walls traversed by small canals.

Sixth, Two circular concentric rows of woody bundles, each surrounding a space filled by various vessels described further on.

These bundles are almost in contact with each other in the first row, and a little less approximated in the second.

Similar bundles are remarked, but gradually less abundant in woody fibres, and more and more separated from each other, up to the axis of the stalk.

None of these tissues which we have just described contain sugar, while they contain,

* According to M. Avequin, each developed stalk of sugar cane contains, on an average, two grammes of *cérosie*.

in greater or less proportion, other substances indicated at the end of this memoir.

I have determined the seat of the crystallizable sugar, by observing, under the microscope, thin sections of the different tissues of the dry cane. I took the pains to separate previously the detached particles by agitating the sections in anhydrous alcohol. This liquid not dissolving the crystallized sugar, we facilitate the observation by introducing it between the *porte objet* and the plate which covers the sections. By the aid of these dispositions, we may discern crystals of sugar more or less voluminous, and appearing similar to those of rock candy, in all the cylindrical cells with thin walls which surround the numerous bundles of woody fibres and vessels, from the axis to the second row of fibres the most woody.*

We remark that all these cells communicate with each other in the surfaces in contact, by a great number of small openings traversing the double thickness of their lateral walls, which openings are not found in the bottoms representing the two bases of the hollow cylinder or prism which each cell forms.

In ripe canes, all the tissues which we have just indicated submitted to a washing with pure water, and, put in contact with iodine, become yellow: sulphuric acid maintains and renders more intense this coloration, disaggregating the cellulose.

But if we remove, by the aid of a solution of one part of caustic-soda in ten parts of water, a part of the azotized matter which impregnates the small vessels with thin walls, as well as a portion of the azotized and woody substances with which the sacchariferous cells are injected, we remark then, under the influence of the double reaction, (of iodine and acid,) several curious phenomena—the small-pointed vessels, commencing to disaggregate, present a slight indigo-blue coloration.

The internal part of the sugar cells, the last formed, swelling very rapidly, passes to the state of the particles of cellulose, disaggregated to the extent they are found to be in solution of starch. We comprehend, then, how these parts are tinged an intense indigo-blue. The azotized particles which were adhering to this inner layer separate from it, and manifest their presence by the peculiar orange color of the light granular outline which they form parallel to the contour of the inner swollen walls.

The external membranes earlier formed, more strongly aggregated, and more injected, resist this peculiar disaggregation; they swell, however, form wavy folds, and sepa-

rate in various points from the neighboring adhering cells, preserving the orange-yellow color acquired under the influence of the double chemical reaction.

After washing with pure water, if we add a solution of caustic potassa or soda to a thin slice, we remark that all the parts of the tissue injected with woody substance are colored yellow, while the small-pointed vessels and the cuticle become more translucent and colorless. This difference in the effects of the reagent adds another distinctive character between these small vessels and the rest of the tissue of the cane. It appears to indicate the absence of woody matter in the parts which, under the influence of the caustic alkali, do not take a persistent yellow color.

The color also everywhere disappears, if we follow the alkaline action, at first with a washing in pure water, and then add acetic acid in excess. This acid clears very notably the *microscopic view*.

If we expose to the action of caustic potassa or soda similar thin slices, and render the effect more marked by the aid of concentration to dryness, we observe, after a complete washing, that the slices have been completely disaggregated. It is the same with the small-pointed vessels, which we do not find again in the space which they occupied. All the other parts of the tissue, in becoming disaggregated under the action of iodine and concentrated sulphuric acid, take an indigo-blue color, which characterizes pure cellulose.

In sugar-canes less developed, the partial or complete purification of the cellulose from all the tissues is much more prompt, and does not require as powerful re-agents; for, if we treat under the microscope some very thin slices of the stalk (between the knots of the middle portion) of a green sugar-cane grown only to a third of its development, first, with pure water, secondly, with a watery alcoholic solution of iodine, thirdly, with concentrated sulphuric acid, we remark that the epidermis, and the cellular tissue under the epidermis, resist, and take an intense orange color; the woody fibres entirely disaggregate, and the large-pointed vessels, to the number of two in each one of the vascular bundles, assume and retain an orange-yellow color, the small-pointed vessels appear colored a greenish blue, and disaggregate promptly. Finally, the sugar cells pass from a yellowish shade to a green, then to an indigo-violet, swelling and breaking up gradually.

I have submitted to the same reagents the lower whitish part (completely enveloped by the sheathing—*engainantes*—leaves) of a stalk of cane, at an early stage of its growth. In this portion, three centimetres high from one knot to the following one, a section under the microscope showed the fibres destined to become woody, as yet having but little thickness.

An aqueous solution of iodine colored the

* The specimens which were used in this experiment, were prepared in 1843 in the colonies, by M. Derosne, who dried rapidly in the sun canes cut previously into slices, about one centimetre in thickness.

tissues yellow, with the exception of the small-pointed vessels; the addition of a drop of sulphuric acid gave rise, on the whole of the tissues, to one of the most beautiful microscopic appearances; the external hairs, yellowed on their external cuticle and their internal granular membrane, became violet throughout the whole thickness of their swollen walls; the cuticle and the epidermis of the stalk had acquired a deep orange tint, the subjacent cellular tissue was blue throughout all the cells; the same shade colored the small-pointed vessels, thus forming a blue cylindrical bundle, entirely surrounded with an orange-yellow tissue, to wit: first, the large-pointed vessels, and the fourteen to eighteen tubes adhering to each one of them; secondly, the superposed tubes; thirdly, the fibres slightly woody. In the middle of the yellow walls of these last, the inner layer of recently formed cellulose was seen, detaching itself in an irregular ring, swollen and blue.

In the younger tissue, above this knot, all the cells present a kind of round or elliptical nucleus of fine azotized tissue, having a diameter equal to nearly a tenth of the diameter of the cell; abundant grains of azotized matter were adhering to all the inner walls; numerous grains of starch, having about 5-1000 of a millimetre of diameter. The successive additions of iodine and sulphuric acid tinged the epidermis a deep persistent yellow; all the tubes, vessels and cells, were swollen, assumed a deep violet tint, and separated from each other. Soon the solution became more complete, the blue walls disappeared, exposing to view the isolated brownish-yellow epidermis, and all the orange-yellow azotized particles which were adhering to the interior of the destroyed cellular membranes.

The same successive treatments, applied to the thin slices of a lateral shoot, the leaves of which were only developed to thirty centimetres in length, exhibit the epidermis of

the leaves and that of the little stalk colored a bright orange-yellow, while all the other elements of the tissues pass rapidly to a violet color, disaggregating themselves.

Finally, in all the stalks and leaves of the shoots recently formed, grains of starch are remarked in great number.

The stalks contain it, especially in the tissues under the epidermis, in the sugar cellular tissues, all around the vascular bundles.

The leaves also present abundant secretions of starch around the vessels of the nerves, in the resisting cellular tissues which envelop these nerves, and extend from one of the faces of the leaf to the other.

These remarkable differences in the nature and distribution of the proximate principles, the much less thickness of the walls of the cells, fibres, &c., and the much less abundant injection of woody matters in the younger tissues, seem to indicate that the differences of the same order would manifest themselves, when the proximate composition of the incompletely developed stalks should be compared with that of the stalks which approach to maturity.

The results of the comparative analyses have effectually exhibited these differences. They help to explain the difficulties, already well proved by the practice of sugar refineries, which the treatment of canes cut before being ripe present.

They show, besides, that it would be useful to separate the suckers, or developed shoots, which remain adhering to the workable stalks, and perhaps even the younger extremities of these stalks, near the terminal part called the arrow (*flèche*,) which is always separated.

We see likewise, by casting the eye over the comparative analyses, that the composition of the sugar-canes is more complex than was supposed.

PROXIMATE COMPOSITION OF SUGAR-CANES.

Ripe Otaheite Cane.

Water.....	71.04
Sugar, (1)	18.02
Cellulose and woody matter, (2)	9.56
Albumen, and three other azotized matters, (3)	0.55
Cérosie, green matter, yellow coloring substance, matters colorable brown and carmine red, fatty substances, essential oil, aromatic matter, deliquescent matter (4)	0.35
Insoluble salts, 0.12; and soluble, 0.16: phosphates of lime and magnesia; (5) alumina, sulphate and oxalate of lime, acetates and malates of lime, potassa and soda; sulphate of potassa, chloride of potassium and sodium	0.28
Silica.....	1.20
	100.00

Cane at one-third of its Growth.

Water.....	79.70
Sugar.....	9.06
Cellulose and incrusting woody matter.....	7.03
Albumen and three other azotized substances, (6)	1.17
Amidon, cérosie, green matter, yellow coloring substance, matters colorable brown and carmine red.....	1.09
Fatty and aromatic matters, hygroscopic substance, essential oil, soluble and insoluble salts, silica, alumina.....	1.95
	100.00

1. By admitting that glucose and liquid sugar do not pre-exist, we comprehend their habitual presence in small proportions, by reason of the alterations at all the points

where the tissues are torn or cut at the moment of the gathering of the canes.

2. The relative quantities of tissues vary according to the *knots* (which contain the

closest and most resisting tissue) are more or less approached to each other.

3. This quantity agrees with the elementary analysis, which gave for 2297 milligrammes of dry substance, seven cubic centimetres of azote : $T=15^{\circ}$, $P=75.54$ volumes at $0^{\circ}=6.47$ cubic centimetres : weight $=0.02145$ of azotized matters in the dried cane, or 0.0055 in cane in the normal state.

4. Substance which (MM. Plagne and Hervey) has the property of transforming, in the juice, the sugar into a viscous and insipid matter, and to oppose alcoholic fermentation ; a cold filtration through bone-black eliminates this organic deliquescent substance.

5. The juice of the cane contains some biphosphate of lime, and phosphate of magnesia, for the addition of a slight excess of ammonia gives a crystalline precipitate of the double phosphate of ammonia and magnesia, besides a flocculent precipitate, which collected and treated by sulphuric acid, gives sulphate and biphosphate of lime. Under the double influence of the air and ammonia, the juice is gradually colored brown.

6. The total weight of these four azotized matters is deduced from the ultimate analysis which gave, for 2840 milligrammes of dried substance, 17.25 cubic centimetres, $P=75.25$, T plus 13 our 0.009 of azote, by weight $=5.85$ per cent. of azotized matter in the dry state, equal to 1.17 per cent. for the normal state.

We see that the green cane analyzed contains one-half less sugar, about thirty per cent. less of issue, and three times as much organic substances and salts, as the ripe cane. Some analogous differences would explain, without doubt, by reason of the obstacles which various organic matters and salts oppose to the crystallization of the sugar, the impossibility of extracting cane-sugar economically in countries where, for want of a sufficient temperature, this plant cannot acquire a normal maturity.

The knots of the sugar-cane are formed of a close tissue, in which the woody fibres of the thick walls predominate, where all the cells present, relatively to their greater thickness, smaller cavities : where likewise the sacchariferous cells are smaller and less numerous. We comprehend, then, how the quantities of sugar which are found in them are reduced nearly one half, or in the ratio of eighteen to ten hundredths—a result which M. Péligot has proved by the chemical analysis of ripe canes, and the exactness of which I have been able to verify.*

* The knots become more woody still, whenever they develop laterally at the exterior a shoot or radicle ; for we find then, in the corresponding internal part of the knot, a mass of tissue strongly incrustated with woody matter.

We cannot be astonished with another fact, which appears singular at first sight : it is, that the knots contain as much water as the whole of the tissues of the entire stalk. The reason is, that the more considerable proportion of cellulose and incrusting woody substances in certain parts, is compensated by a less proportion of sugar in the other parts of these joints. We cannot, however, give a complete idea of the peculiar composition of the knots of the sugar-cane, without adding that the solutions which are extracted from them contain, relatively to the sugar, more foreign matter than is found in the juice extracted from the cane between the knots. It could not be otherwise, since the liquids contained in the tissues deprived of the peculiar sacchariferous cells, having little or no sugar, contain the greater part of the foreign substances in the sugar, the presence of which is shown by analysis.

In terminating this memoir, I wish to say a word on the economical question of the production of sugar in the colonies.

The question which at the present moment occupies the public attention, seems to me to have received, on the part of science and industry, all the elements of a rational solution ; nothing more is required than to apply certain theoretical and practical ideas.

The following are the principal conditions which, in my opinion, it would be indispensable to fulfill. In the first place, and in order to define them in a general manner, I will say that it would be necessary to obtain a means of working which would not be too expensive, and which would assure the best possible recompense to *free labor*.

This would be arrived at by bringing to the aid of men all the forces which the agricultural, mechanical and chemical sciences of the day offer ; especially by the following means :

In all that concerns *cultivation*, to collect with care and scatter over the land all the disposable mineral manures of each plantation, the ashes of the bagasse, the *cal* of the boilers ; and to add to them alkaline or calcareous compounds, of a nature to replace those of which the soil has been deprived.

To utilize all the residues from the manufacture : the molasses and scum, for the nourishment of animals, in order to return to the soil, with the animal excrements, the greater part of the substances which vegetation draws from it.

To apply the different pulverulent residues, arising from the revivification of bone-black, ashes and dried marl and earth, to the absorption, drying and preservation of the animal manures, in order to spread them under less bulk and weight.

To complete the organic nourishment of

the plants by means of manures rich in azotized substances, dried blood and flesh, the residues of fisheries, spoiled cod-fish, &c.

To avoid the employment of manures capable of adding an excess of different salts beyond the proportions useful for the development of the canes.

We shall understand the importance of these improvements which ought to sustain or increase the fertility of the soil, by reflecting that the same lands, according to their state of fertility or exhaustion, have produced annually 7,000 kilogrammes of sugar per hectare—a production which has been gradually reduced to 2,000 kilogrammes. If it is thought that the labor has become too expensive, in this latter case, with the exhausted soil, it would be economical at a double price, on the same land at the time of its greatest fertility.

Manufacture.—In the first rank, it is necessary to place the means of extracting a greater quantity of juice, to carry this quantity from fifty to sixty per cent., which is obtained, to seventy-five or eighty, which could be obtained. The use of a second mill, with the injection of vapor or streams of boiling water, would give this result, according to practical experiments made in the colonies by M. Derosne, which we concerted together. In all cases, the most necessary condition of success would be to avoid all delay in the operations, to accelerate even the extraction of the juice, and the elevation of the temperature above the point where fermentation can take place.

We should obtain a very desirable rapidity also in the evaporations, by using the evaporating apparatus perfected in France, and applied with success in the manufactories of beet sugar (especially those of MM. Derosne & Cail, Pecqueur, Gaspard, Tamisier, Claës, &c.) Perhaps it would be well, in order to render the general introduction into the colonies rapid, to carry there, in the first place, the most simple and least costly apparatus.

The rapid extraction of the juice and evaporation are, it is true, subordinate to the resources of fuel in certain localities, which cannot receive importations of coal, and have no other combustible than bagasse.

It would be very useful to render general the use of bone-black, and the processes of revivification, in order to obtain purer and more abundant products of crystallized sugar, and to be able to render profitable a greater mass of the useful residues as manures.

The new processes of methodical purification and rapid drainage by centrifugal force; finally, the drying of crystallized sugars, offer a useful complement to the improvements which may be realized in our

colonial industry; they will allow an increase of the real value of the products, and a diminution of the cost of packing and transportation: they will avoid, finally, the alterations which fermentations in impure and moist sugars occasion while *in transitu*.

It is evident, likewise, that administrative measures of a nature to encourage the production of the purest sugar would be useful in reference to the impost, applicable from that time to a greater and more stable value: they would have the effect of hastening the progress of metropolitan and colonial industry, of soon rendering the production more economical, and of developing the consumption of sugar, as yet behindhand with us.

The principles on which all these improvements rest, appear to me to be incontestable. Their application would demand, without doubt, serious studies in each one of the localities which would present peculiar circumstances; but a similar study, undertaken by competent men, would be neither very long nor difficult at the present day.

SUGAR-CANE CULTURE.—CULTURE OF THE SUGAR-CANE AS FOLLOWED ON SOME OF THE MOST SUCCESSFUL ESTATES.—The first operation is to clear the main drains and the cross ditches leading to them, so as to arrive at as complete a draining of the field as the localities will permit. This is a work of the utmost importance; indeed, when judiciously attended, the soil of Louisiana will be found as favorable to the sugar-cane as that of any part of the world. The ground is then cleared of all trash remaining on it at the close of each grinding, and the whole is bedded in a trench opened for that purpose between the rows of such of the stubbles whose soil requires renovation; by so working, the nutriment absorbed by the cane prepared for the mill is returned to the soil, and the bedded leaves and trash serve for the planting of the following crop, whilst in the mean time giving porosity to the soil and facilitating percolation for the growing stubbles. Fields thus worked are found to gain in fertility by cultivation, instead of losing, as is always the case when the ground is left without repose, and the trash is burned.

The field being in a fit state for the plow, the ground intended for the plant-cane is opened as deeply as possible, each plow being drawn by a team of four heavy mules; then wide, clean furrows, by a double plow called the fluck, are opened eight feet apart, and according to the quality of the soil, from two to four canes are placed in each furrow and lapped the whole length, and are immediately covered with fine earth; on a well-managed estate, this work should be completed at latest by the first of March. Im-

mediately after which begins the second operation, to wit: the barring off the stubbles or rattoons, and the cultivation of the field including corn and other provisions; barring off consists in running as near as possible each side of the stubble, a plow so shaped as to throw off the earth from the stubbles, then the stubbles are shaved close to the mother plant by a very sharp instrument worked by a horse, and very rapidly and in such a manner as to leave on the plant, if possible, only from a half to one inch at most of earth. And now begins the plowing between the rows of canes, plants and stubbles, to put down the grass, to loosen the soil and to forward vegetation; for this purpose, and for a field of six hundred acres of cane and two hundred acres of corn, thirteen two-horse plows are amply sufficient, provided the teams can be changed twice a day; three hands follow each plow with their hoes to clear the grass where the plow cannot do it, and to clean the cross ditches; this working is continued until the canes are sufficiently forward to be earthed, when the fine soil between the rows is gradually brought from their centre to the foot of the plant, thereby turning the row into as many ridges, and the space between them into as many drains, sloping about one foot from the top of the ridges to the bottom, and emptying themselves in the cross drains, which in their turn run into the main drains made of sufficient capacity to carry rapidly any quantity of water that may fall during the most rainy season. So soon as this work is completed which should not be later than the 15th of June, a subsoil is run three times between each row, and to the depth of one foot; this is done very rapidly where the instrument is sharp and well shaped, and drawn by two strong mules, and adds considerably to the porosity of the soil.

The canes thus brought to this stage require no more cultivation; they soon form a beautiful arch, smother the grass below, and shoot gradually their saccharine matter above from cell to cell of a tubular form, until the beginning of October, when commences the 'cutting, the matressing, the grinding, and the boiling of the cane into sugar.

That this mode of cultivation, compared to the routine of three-fourths of our planters, may be well understood, the following dialogue is introduced:

Dialogue between a Planter of the Old, and a Planter of the New and Progressive School of Husbandry.—1st Planter:—How is it, neighbor, that with the same number of working hands your crop of sugar is secured when mine is hardly half through, and that your crops are regular, and generally double of mine!

2nd Planter:—The reason is very simple.

We have, it is true, the same number of hands, but you rely chiefly upon them for your field work, whilst besides mine, I employ mules wherever they can do the same work; the consequence is, that my working power is really greater than yours, as you perceive as we go on.

My teams forming an essential part of my working power, I take special care of them, and never overwork them. I employ 60 strong, well-fed mules; you have only 30 mules and horses, that you overwork and feed badly, whereby they are soon made unequal to the task; they should perform it in good order. The consequence is, that your work is badly done, and that you lose half of your teams every year, whilst I seldom lose any of mine.

Drainage is the life of vegetation; my field is completely drained, yours is not, and thus it is that your soil is stiff and clammy, whilst mine is the reverse. It is true that you employ your own negroes to open a few narrow ditches, without issue when they are full, whilst I employ Irishmen to open main drains so that my lesser drains may always find a rapid issue. This, however, I do not consider an expense, but a capital at compound interest which I place upon my estate.

My soil being made deep and porous by drainage, and yours being the reverse for want of it, gives me a very great advantage over you in a rainy season, or during a drought. In a rainy season all surplus water is rapidly carried away from the surface of my field by percolation, so that a few hours after the heaviest rain, my plows are seen at work; in your stiff and clammy land, on the contrary, your field remains under water, it being deprived of surface draining by percolation, and your plows are seen at a stand for days together when most wanted to command the grass smothering your plants, whereby you lose your crop. Again, our summer sun is death to the plant under surface water, whilst highly favorable to that freed from it.

During a drought, in my deep and porous soil, the sun by attraction supplies my plants with moisture, to meet which they send their roots deep in the soil, which is favorable to the production of saccharine matter. In your field, on the contrary, the sun having no action beyond its surface, bakes the land, and starves your plants, whose roots cannot penetrate below. For purposes of reproduction the best and most perfect seed are used. This I invariably do; you do the reverse, by keeping for plants your worst canes.

My first operation, in beginning the agricultural year, is to clear my drains, so as to prepare my ground for the plow, and to clear my field of leaves and tops by bedding

the trash in furrows between the stubbles, that nutritious power taken from the soil by the cane ground, be returned to it by the leaves and tops thus bedded, production and renovation being found thereby to keep in perfect equilibrium, and rendering unnecessary the laying by of a large portion of the field for purposes of renovation, by a change of cultivation or otherwise, as was lately the general practice.

Your first operation, on the contrary, is to burn your trash, thereby destroying the best manure that can be used for renovation of the soil and production, and then, before cleaning your ditches, you commence plowing and planting. The consequence is, that when the season is wet, your ground, being saturated with water, becomes stiff and clammy; that your plows move in it with the greatest difficulty, and at best only scrapes it, and that your canes are bedded in mud or earth as hard as brickbats, according to the weather—all things destructive of good vegetation; whilst my field being completely drained before I begin plowing, my teams of four stout and well-fed mules walk over it rapidly, leaving behind them as deep a furrow as needed, and the ground, thus loosened at a proper depth, being ever relieved by my drains of all surplus water, retains a porosity which affords to my canes a dry bed and a cover of fine soil, whereby life is secured to almost every eye of the plant; and then again your land being stiff and clammy for want of draining, and mine not, my planting is completed before yours is half done.

I plant my canes eight feet apart, and according to the quality of the land; I place from two to four canes in each furrow, lapping the same the whole length.

There being plenty of room between my rows of cane, I work two-horse plows with ease, and without disturbing the young plants shooting out, or the fibres forming in the deep soil prepared, all which is of great importance, for the moment the young roots are disturbed, the plants turn yellow and their growth is suddenly checked, and so remain until new fibres restore them again to a healthy condition, which seldom takes place in less than a fortnight; thereby throwing back the growth and maturity of the cane a fortnight and more. Thirteen two-horse plows and a double set of mules, so as to change them once a day, and three hands to each plow to clear the grass where the plow cannot act, suffice to keep in the very best order my six hundred acres of cane and two hundred acres of corn, (whilst preparing fine soil to earth my plants when needed,) to clear my cross ditches of grass and earth thrown in them by the plow, and to open each furrow into the cross ditches, so that in heavy rains the water not absorbed by percolation may be

rapidly carried to my cross and main drains, &c., &c.

By 15th June my canes are sufficiently forward to leave them to themselves, when the fine soil prepared by the plow between the two rows is rapidly carried to the foot of the cane so as to form a ridge of about one foot, descending gradually to the centre of each row, thereby forming a drain, through which I run three times a subsoil to the depth of about one foot, the whole finding an issue for any surplus water in the cross-ditches. By the middle of June, my field requires no more care, and then begins wood-chopping by the men, and brick-making, road-making, or some other light work, by the women and weak hands.

You, on the contrary, plant your canes five to six feet apart, and, be the condition of your land what it may, you only put two canes in each furrow, lapping the same.

My furrows containing one half more canes than yours, and my ground being better prepared, I obtain a much larger number of mother plants in each row; and then I do not disturb them whilst forming their roots, my plows having plenty of room to work down the grass, and to prepare soil for them when ready to receive it.

The reverse is the case with you: you cannot work your plow in your narrow rows without destroying more or less of your plants, or disturbing their tender roots, whereby their growth is immediately checked, the plants turning yellow, as before said, to their great injury.

Want of space compels you to use only one horse, whilst I use two mules to each plow; the consequence is, that with exactly the same number of plowmen, I perform double the work you do, and that the grass in my field is rooted out and destroyed, whilst in yours it is seen growing up nearly as fast as cut. Unable to overcome the grass with your plows, the whole of your gang of negroes is seen constantly employed with their hoes helping the plows, and it requires unusually favorable weather to enable you to lay by, by close of July, such canes as you can bring forward, thereby throwing back their maturity, and your wood-chopping, fully one month and more, and bringing your grinding to the most critical period of the year.

And when the cane is laid by to shoot up its tubular cells and to form its saccharine matter, it requires both air and sun, neither of which yours can have in your narrow rows, and hence the want of maturity of your canes when mine are fully ready for the boiling-house. Thus it is:

That my canes having good drainage, plenty of room for air and sun, and good plowing, neither of which yours have, grow faster and larger, and mature sooner,

whilst I obtain more mother plants and less shoots in my twenty-two rows per acre than in your thirty or thirty-six rows.

That my negroes are chopping wood in the forest, making bricks, preparing the sugar house, &c., &c., whilst yours are sweating among your canes, and catching cold and fever on issuing out of the crowded leaves.

That my canes are laid by a month earlier than yours, and even more, which gives me an advantage over you of one month in the maturity of my canes, which is all important, for, when the winter is early, the ripe cane can bear a very heavy frost, and be cut and preserved one month and more, whilst a green cane, whether cut down or not, is destroyed by the first heavy frost.

That whilst I carry canes to the mill, averaging five to six feet high, yours seldom average more than three to four feet.

That my wood-chopping is completed when you begin yours, whereby my fuel for boiling is dry before used, which is a very great advantage, both for the rapidity and quality of granulation, whilst yours is green.

That my hay and provisions are secured when you begin to take in yours, whereby you are very often deficient in your stock of hay, by not being ready for it, when it is ready for you, and your poor animals suffer for want of dry food at the very time they most want it.

That my teams, by proper treatment and a judicious distribution of their work, so as not to throw extra labor upon them at any time, retain their healthy condition throughout the season. That yours, on the contrary, having to go through the heaviest of your work within a very limited period, are broken down before the commencement of the grinding, whereby your mill is half the time idle for want of canes.

That in an early winter you lose a large portion of canes, whilst I always secure mine.

That with equal power of engine and boiling apparatus, my teams keeping both supplied with canes to the extent of their power, and my fuel being dry, which is not the case with you, on an average I boil double the quantity of sugar that you do, and that my grinding is completed when yours is not half through.

Thus it is, in fine, that by close attention to the ordinary rules of good husbandry, and the proper balancing of my working power, agricultural and manufacturing, during the period within which sugar can be made in Louisiana, I have as good and safe a crop as any other in the United States; my crops average nearly double yours, and are regular, although we work the same number of hands, and our fields are equally extensive.

SUGAR PLANTERS—NOTES FOR.—

The greatest sum of knowledge acquired with the least trouble, is, perhaps, that which

comes with the study of the few simple truths, the basis of the laws of Nature, and which the observing mind finds beautifully written out in natural language, speaking volumes of wisdom to him who, moving through the world, trains his eye to observation, and his mind to reflection. Very many of the phenomena of nature, which to the uninformed appear prodigies, are only beautiful illustrations of fundamental knowledge, which is not an oppressive weight, but a charm that sustains the student in his labors, and enables him to add to his store every new and important fact, giving it place and relation until each acquisition successfully elevates a structure of correct proportions and increasing strength, which at last becomes a fortress of enduring knowledge. It is a common prejudice that persons possessing instruction in general laws extending over the wide field of what is termed education, have had their attention too much divided, and can know nothing perfectly; but the very reverse is true, for general knowledge renders all particular knowledge more clear and precise, and is a foundation already laid, to be built upon at any angle. The ignorant man may be said to have charged his hundred books of knowledge with single objects, while the informed man makes each support a long chain, to which thousands of useful things are attached. The laws which govern nature in all her works are to us keys, which, properly applied, give free admission to the mysteries of her palaces and gardens, are the wards of her magic power, which unveil the face of the universe, and disclose endless charms, of which ignorance never dreams. A man reading a thousand volumes of ordinary books, as agreeable pastime, will receive only vague impressions, but he who studies the methodized book of nature, converts the great universe into a simple and sublime history, which tells of a Creator, and may worthily occupy his attention to the end of his days. In seeking an enlarged view of things, we are too apt to overlook the very objects of our search, and too late in life discover that our habits of observation are entirely general and superficial, instead of being close and particular.

Things that are seen, felt and heard; that is, which operate on the external senses, leave on the memory much stronger, and more correct impressions, than where the conceptions are produced merely by verbal description, however vivid; and an author of an essay or a volume may often hear his readers and critics say: "he has written well, but told us nothing new;" thus, unwilling to confess ignorance of what their pride whispers they ought equally to have been possessed, or as if novelty and originality should be the inducements to a writer. But in the rudiments of knowledge only, very few of us are sufficiently familiar: and with reference to this familiarity, persons who

take a philanthropic view of the world, will observe with pleasure that those of their fellow-travelers in life who are most generally informed and familiar with the laws which govern matter, are men most fertile in resources, more independent of others, and therefore more reliable upon themselves, and the contributions which the world at large receives from such hands, deserve a greater recompense for their more extended benefit.

The agriculturalist will esteem vegetable physiology as the highest branch of natural science, and will observe that it depends absolutely upon an exact knowledge of parts and constituents, and that any attempt to investigate the important laws of vegetable life must necessarily be abortive without a strict acquaintance with the not less important details of organization. And by this is not meant merely a general idea of external form, or a vague notion of internal anatomy, but the most precise knowledge that the nature of the subject will admit. This, in the sense of perfection in one branch, and exclusive study therein; but how much more is to be acquired for practical utility, by more general observation at first, and thus surrounding the subject from the borders, make regular approaches toward the centre. The farmer confines his labors not solely to the production of wheat, nor the planter exclusively to the culture of the cane or the cotton plants, but each must likewise attend to his crops of corn, of hay, vegetables, etc., each governed by its peculiar laws of re-production, which must be conformed to with little deviation. Neither is vegetable life the only branch for their attention, while they have to provide the animal power to perform the labors of cultivation, and it takes not long to discover that the greater part of the phenomena of organic and inorganic life are merely chemical and physical phenomena, modified by an additional principle.

Intuitively, we learn the rotation of the seasons, and the planter adapts his labor thereto, with definitive result. The seed is not placed in the ground in mid-winter, nor a harvest expected in mid-summer. But beyond these things, which are only the routine of common existence, the intelligent mind finds the field of observation opening with extended view, as it progresses in the ever constant labor of adapting existing means to desired ends.

The cultivation of cane would not be attempted on land where water constantly stands, for it would be vain, while the same locality would produce a crop of rice with little labor. And beyond this, aside from the facility of inundation, we learn that the rice will grow in comparatively dry land, and that "flowing" is not absolutely necessary to its production. The cultivation of the same plant successively for several years, is found

to impoverish the soil, it is said, if continued on the same field, and while some of our neighbors are warm on the subject of rotation of crops, others have almost equal confidence that the powers of the soil may be sustained by deep plowing, proper manuring, or returning to it the otherwise useless trash of its production. This necessity of rotation in crops being now proved by the experience of the planter, he is led to discover that nature herself, unassisted by art, brings about the same ends. The pine forest, destroyed by fire, is soon replaced by oaks and other trees. The mangrove swamp having existed for a century, even until successive contributions of its leaves, falling upon the water and there detained to decay by the floating roots of the same plants, at last accumulate material and elevate the soil above the level of the water, when the mangroves die, and are succeeded by the cane-brakes. With them come the numerous grasses, the seeds of which, planted by the wind, soon take root and thrive, until their production, together with that of the cane, again raises the soil to another level, whereon the stronger trees of the forest succeed.

Plants require different organic matter at different times, and are not always prepared for the natural vicissitudes of their existence; wherefore, we observe that protracted rains, drought, temperature, all sources of nutriment as agents of nature to the plant, produce definite results upon its growth, but different one time with another, and it becomes desirable to know how to make best use of such incidents. For this purpose, the knowledge of vegetable anatomy and physiology, by which we may in a measure comprehend the structure and causes of increase, will lead to a better understanding of the wants and material necessary to each plant, and how these supplies may be best obtained and administered, to the attainment of more profitable results.

Since the discovery of the microscope, the world has learned not only that plants breathe, feed and digest, but how the functions of breathing, feeding and digesting are carried on. It has been ascertained by what means an increase of dimension is brought about; how their want of locomotive power has been compensated for, and by what precise means their reproduction and multiplication are placed beyond obstruction by any natural impediments. In short, the exact use of every plant, for its various parts have been distinctly ascertained, and in the end the vegetable kingdom is rendered subject to the power not only of man's physical energies, but of his mental resources.

The two great sources of food to plants are the soil and the air, and consequently we observe that they take their nutriment only when resolved to liquid and gaseous forms, whatever be the shape in which it is admin-

istered. And these elements of their nutrition are the great primitives of creation, carbon, the gases, earths, and metallic bases. But each plant has not the same demand as others for these respective aliments. To the cereals, to which belong the rice, corn and cane plants, nitrogen is essential, and water, the great source of production, becomes indispensable to their growth. The glossy coat of the reed tribe and the outside membrane of the cane stalk, etc., are attributable to siliceous matter taken up from the soil, and the absence of which in old cane lands is supposed to be the secret of their poverty. To remedy this deficiency, the combustion of the "shuck" is practised, but a second thought will show to an intelligent mind that the siliceous matter, liquified by fire, combines with the alkali of the plant ashes, and becoming vitrified by heat, is restored only in an insoluble state not available to vegetation, and operating beneficially only to heavy or moist soils, by its mechanical distension of their components, facilitating the action of the air more uniformly throughout. For the same reason we mix heavy bog earth or alluvial soil, with loam and sand. In the beautiful *camelia japonica*, we find a peculiar demand for hydrogen, and therefore supply it with water, the principal source of this gas, protect the plant from the sun to provide against too rapid evaporation from its roots, having placed it in a soil consisting chiefly of vegetable fibre, which thus sheltered has an affinity for moisture, while its decay produces the element chiefly in demand. Nitrogen is a not less important food for cereals, and is chiefly supplied by the decomposition of water. It is the principal ingredient in *gluten*, which, by the vital action of the cane, becomes transformed to saccharine, and though drainage may be the great labor of this southern country, because of the surplus of water on its soil, yet there are other available methods to compensate for this superabundance of water, and productive of effect in a greater or less degree. An excess of moisture without heat, and combined with air, induces decay in seeds, and is injurious even to growing plants, as it destroys the delicate tissue of their roots. Therefore plants cultivated where they have an abundance of heat and moisture, but where the roots are beyond the reach of air, by reason of their depth in the soil, have a tendency to produce leaves instead of fruit, and all their secretions are weakened. And on the other hand too little moisture prevents the leaves and fruit from maturing. Hence we derive the maxim, "plant deep on dry, and light on moist ground."

We observe that all woods growing in warm, moist climates, are lighter and more porous than those growing in colder and dryer situations. There is also a marked difference in their durability commensurate

with their density. They arrive at an earlier maturity, and all vegetation partakes of similar construction, grown on similar soils. The soft and pithy woods, too, yield only weak and watery saps, and is but in few plants belonging to the same climate, that oils or extracts exist in quantity sufficient to work out. They are not formed, or will not rise without a certain degree of heat, and it is well known that frost arrests all currents of circulation. The fruit of the walnut and the beech in the south of Europe produces oil, but will not in this country. The mulberry of this country affords a much less quantity of gum to the silkworm than in France or Italy; and the ground-nut oil, so common in the East Indies, as well as cocanut oil, are not known in the West Indies as articles of commerce.

That all the secretions of a plant have a definite purpose in the vegetable economy, is beyond a doubt, but that these purposes are not yet definitely known, is equally true. We have no satisfactory explanation of the cause of fragrance in flowers, neither its use to the plant. The saccharine contained in the seed is the primary motive power in its vegetation, and from this source is eliminated the other juices which tend to the future nourishment of the plant. Germination having been effected, the development of the roots under ground, and the stalk and leaves above, is at once produced by the additional moisture attracted by vital action from the air and soil. This moisture is decomposed by the great attraction of the carbon of the seed for the oxygen, and carbonic acid is set free. The nitrogen contained in the gluten of the seed, by its union with the acid, is converted into diastase, a substance resembling sugar, from which the young plant now takes all its nourishment, until by more sufficient extension, it becomes able to feed itself.

The formation of the vital knot, or "collet,"* which has been compared to the heart in animals, now becomes more and more distinct, and as it approaches perfection is proportionably more essential to the life of the plant. At this stage the wounds received from the implements of cultivation, or the hoof of the animal drawing the plow, are more liable to prove fatal to the shoots of the cane, or the new plants from the cotton seed, than at any other period of their growth, and the prudent planter will watch with some care that the mule or horse does not travel on the "ridge row."

The cane plant increases from its centre, but has no sensible pith or medullary canal. Its tissue is but a bundle of woody fibres, interposed by an infinity of little cells. The long succession of these fibres is interrupted at regular distances by joints, sometimes

* The joint of the cane under ground.

distinguished as nodes, which perform an important part in the economy of the plant. Sap, as it rises through the collet, is little less than water, with some mucilage, in the young shoot, but as soon as these nodes are formed, they become receptacles of little particles of gluten, starch, and sugar immediately formed, and these are thence taken up by the sap, dissolved, and pass into the general circulation of the stalk and leaves. The sap of the sugar maple and the cane is not sweet in their roots, but in beets, as though the operations of nature could be reversed and produce the same results, we find, comparatively, no saccharine in the tops.

The cortical integument of the cane plant is only a rind and not a bark, as it has no distinct separation from the wood. It is possessed also of properties of secretion, contains a coloring property and oleaginous substance, which the body of the cane does not, and which are both extracted in the common operation of rolling by powerful mills. This coloring matter is strictly tannin, and the oleaginous is readily separated from the froth of the mill-strainer, and converted into wax. In the circulation of the juice, both of the maple and the cane, as well as in all plants, we observe changing qualities in the various parts and times of its circulation. The nearer approach to maturity in the tree, enriches its juice, and the little of returning sap found in trees felled during winter and exuding from their cut ends, is almost concentrated by a short exposure to natural evaporation. We observe, then, that during the annual existence of a plant, while the vital current is in motion, a regular and constant change in the juice at every stage of maturity, and the different properties it possesses during this progression, deserve constant attention. It is the vital action which converts the sap to sugar, and when the motion that belongs to vitality is arrested by frost, the conversion to sugar also ceases. Cane-juice once frozen has but an uncrystallizable sugar, and yet the canes being only "frosted," are taken to the mill and still yield sugar, because congelation having taken place only on the ends and surfaces, protects the centre from the same change, as the covering of snow protects the earth in winter from the deep frosts, which would entirely destroy the roots it contains. But as soon as these frozen portions of cane-juice are free to move, chemical power alone is left to them, and with extraordinary rapidity they then circulate in the sap as the active principle of fermentation, which in a very short time extinguishes all traces of sugar to the great loss of the planter. This stagnation of the juice in the cane, by which its vitality is affected and its properties changed on the re-

application of heat, is a phenomenon parallel to the fermentation of juice exposed at a moderate temperature to the free circulation of the air, which all planters know to be injurious in proportion to the length of time and degree of temperature, and therefore expedite the process of sugar-making as much as possible.

The nodes of the cane, incorrectly called joints, by microscopic examination are found to be the ovaries of the plant, and from which start one, and, in some varieties of the East India cane, two buds. By a peculiar arrangement of the fibres of the centre, a little cell is formed, in which, as in seeds, a concentrated portion of sugar exists to afford nourishment to the germ until of such age as to obtain its own. And in this protection of the vital spark by portions of the mother plant, stronger and more indurated than all the rest, we observe the beautiful work of design. In stubble or ratoon land, where the stems have been cut from the plant, we observe that the collet, or lowest joint, becomes the seat of life and the source from which in succeeding seasons reproduction takes place. Injury to this, therefore, is fatal to the plant. As spring advances, the soil becoming warmer, the circulation under the collet commences, and the old stem sealed against the exit of the sap by the dead-wood above ground, prevents its escape and forces it to find new outlets. Here again the microscope develops to the eye numerous little bright spots upon the collet, which soon increasing become at first buds and afterwards shoots. This process of reproduction, we can at once see by analogy with all other vegetation, cannot last many seasons in canes, were we not convinced, by the result of experience, that canes not only run out in a few crops, but also degenerate and become weakly and small. The shoots starting from a short distance beneath the surface, are sufficiently near to the air to receive warmth and moisture, from which they then derive their chief nourishment, and at a later day should be covered lightly with earth, when it becomes more essential to protect them from the sun. At this age of the plant, (not more than at others, however,) it is plain that all its nourishment must be taken up from a liquid or gaseous state, and we can scarcely conceive that such inorganic matter as silicon or flint, should be conveyed mechanically to its every part, but must be organized from its secretions. Everything that can act as manure, would apparently be only soluble substances, and we see minerals, earths, metals, and vegetable fibre, undergoing decomposition and assuming new combinations of their elements, to aid in the new development of vegetable life.

As is the lime to the animal kingdom the

base and principal material in the construction of its frames, so is silex in the vegetable world. It is what hardens the rind, the bark, the stem, and the limb, and, aside from the fluid contained in cellular substance, is the chief cause of gravity. All parts of the animal are nutriment to the vegetable kingdom, and no constituents of the former have been discovered to be noxious to the latter. Yet vegetables and plants are susceptible to poisons in a common way, by means of their circulation. Innoculation with arsenic will kill the lilac, and a solution of nux vomica, introduced by the veins to the hop-vine, is fatal in a few hours. Prussic acid in minute doses, changes the bright green of the ash-leaves to the dismal yellow of autumn. The roots, too, of plants take up solutions which, though not fatal to themselves, may be of deleterious influence to animals feeding upon them, and form distinctly an observable influence upon their own secretions, proved by tests applied to the extracts made from their barks. It is observable, therefore, that the amount of their acid secretions may be influenced by the application of alkalies, lime, ammonia, &c., to the roots, as is known to be the case on the sorrels, and may be inferred to be upon canes, which fact every planter should prove for himself. In some districts of Louisiana where shell is abundant, this could be well determined, and for how many seasons its beneficial effect should last, as well as the detail of the application of lime as manure to sugar-cane, might be proved and given to the public.

It is not to be forgotten that sugar is a solvent of lime, and if any method can be discovered by which its use can be dispensed with in the process of clarification of cane-juice, a decided advantage to the operation of sugar-making will at once appear. Besides that the alkalies neutralize the acid, they lessen the quantities of sugar in the result, and incline that result to a redish color. However, the use of lime in sugar-making is not fully understood, and many planters now make their crops without it. To the soil, it is the great solvent of all vegetable fibre, and in like manner is potash; but when their caustic properties are lost or consumed, they are no better than limestone or coal ashes, both of which mixing with the more tenacious clay, make it friable and porous, more pervious to water and less retentive of moisture; therefore not all cane lands can be equally benefited by these applications. Our own, and the practice of our neighbors, must be the guides to all useful results in the application of manures, mode of tillage of canes, process of sugar-making; to simplify and perfect all of which, should be the object of constant study, experiment, and observation of every planter. We are all in want of some practical information on these subjects as well as many others connected with the interests of the

planter. In the rotation of crops, the question lies, is it better to turn cane land to grass, to peas, or corn first, and by what succession is the first object best accomplished? And again, with which crop to apply manure, if with any and not to all.

It is not for us now to go farther into the practice of planting, but from this brief view of a few of the points of common interest, enough of the field has been laid open to show the extent of the land, to what degree the planter becomes his own chemist, and how, dependent upon himself and his own resources, it is plainly necessary that he should consummate his own advancement. To effect this, he cannot stagger blindly forward, hoping by various chance experiments to stumble upon some great improvement, but must, if for no other than the sake of economy, study first the probability of success. He must know enough of the laws of nature and the rudiments of science, not to attempt impossibilities. To employ his agents successfully, he must surely understand their nature, and the mutual influence which they exert on each other, he must understand more fully the structure and function of plants—the office performed by each of their members, &c. Many of the errors which are committed in agriculture, would be avoided if the planter would consent to unite a larger portion of scientific information with his practical skill. In such case, he would not apply the same manures indiscriminately to all soils; he would not suffer land to lie waste which might easily be rendered productive; nor would he be content with a meager crop from soils which, with moderate outlay, might be increased in their fertility fourfold.

We are far from supposing that any scientific knowledge can supersede a practical acquaintance with cultivation, but it is the help-meet to the husbandman; and the knowledge which he gathers from personal experience, will teach him not to disregard the light which may be afforded by the experience of others, and by the researches of science. The crucible, the retort, and the lamp of the alchemist, though they have not yet revealed the philosopher's stone or the elixir of life, wisdom and wealth have been acquired to the world, and the whole human family benefited by the developments which these vain researches have given. One man attempts what the laws of nature have forbidden, and by his example benefits his fellows. Another attempts an object practicable in itself, but by means totally inadequate and inappropriate, opens a mine, and expends a fortune for machinery and labor, where the geologist could have foretold a failure. Another proposes to increase the heat of his furnace by forcing in steam instead of air, and discovers that the fire, instead of being increased is extinguished; a result which a slight knowledge of chemistry would have

prepared him to expect. A third projector prepares a vessel for submarine navigation, but not estimating properly the pressure of water at different depths, is crushed to death during his first experiment. It is plainly important, then, to gather from science the light necessary to protect us from the delusions of an excited imagination, and to guide us in the way of safe and profitable enterprise.

An instructed laborer is enabled to become an improver of the art in which he works, and even a discoverer in the sciences connected with it. He is daily handling the tools and materials with which new experiments are to be made, and daily witnessing the connected operations of nature, whether in the changes by motion or the chemical relation of bodies, and the opportunities which he eminently possesses, must pass unimproved if the artist have no knowledge of principles. But with this knowledge, he, of all men, is most likely to fall upon something new, which may be useful in art, or curious and interesting to science. His practised eye in the field, and dexterous hand in the machinery, may enable him to embrace many opportunities afforded, which he would otherwise pass unheeded by. The processes, too, being often on a large scale, and consequently very expensive in many cases, it becomes the more important to devise means of saving labor and material, while the very magnitude of these operations often brings out facts and principles which would otherwise have remained imperceptible. But the importance of scientific attainments is most apparent when we consider, that in any department of arts, every enterprising operator ought to be informed of the improvements which have preceded his labors in that department, otherwise he may consume time, labor, and money, in merely reproducing what has long existed, and perhaps in a shape preferable to that of his invention. It is obvious that after the first and most important principles have been acquired, there seems to be a light over the whole subject of search; there will be still many difficulties to be met, many obstacles to overcome, and toilsome days and nights consumed, in the nice adjustment in our mind of what we acquire, to render it applicable to practical purposes. Half the labors of great mechanics, such as Whittemore, the inventor of the card machine; Perkins, of the nail-machine; Jaquard, of the carpet-loom; who were originally men of small acquirements in early education, might have been saved if at first they had been instructed in the principles of mechanical science. Accident sometimes casts up important improvements in such a way that the artist can hardly fail to seize upon them, but in these cases even, it will be generally found that only the man of science can perfect these improvements.

Watt confessed that the knowledge he acquired from the lectures of Dr. Black, on

chemistry, though but hints, to his studies, and the mathematical and mechanical attainments he derived from study with such a man, alone enabled him to perfect those great improvements, the beam and the condenser, to his steam-engine, which were the patents of his noble fame. Arkwright is quoted as an un instructed mechanic, and he devoted five years to the perfection of his spinning-jenny, now considered a very simple machine. Sir Humphrey Davy discovered the peculiarity belonging to mephitic gas, after a long series of labors, and but then applied it to practical utility in his safety-lamp for miners, and it is stated by Lord Brougham that the new process of sugar-refining, through the aid of animal carbon, by which more money has been made in a shorter time and with less risk and trouble than was ever, perhaps, gained by an invention, was discovered by a most accomplished chemist, and was the fruit of a long course of experiments, in the progress of which known philosophical principles were applied, and new principles ascertained. The great chemist, whose improvements in the manufactures of iron were the foundations of a princely fortune, owed it entirely to the result of deep research and long-continued study of coal, by which he was at last enabled to substitute the mineral for the vegetable in the smelting of iron.

We are to infer from these illustrations and examples, that no eminence can be attained in any profession, nor particular success in any calling, without study and labor, and that to secure the result for which we strive, we cannot plod on in the dull routine of life, half blind to what is doing in the world around us, allowing ourselves to be surpassed by other laborers, possessed of inferior opportunities, but a perseverance and observation which secures to them the benefit of all they see, and a comprehension of all they observe. The seeing eye and the working hand, and the mind which conceives all things, are the only guarantees to ultimate success to the planter, the manufacturer, and the merchant. Our independence is hereby secured, that unaided by others, we can produce the cane, make the crop, and sell it at the best time, and highest price, then turn to our plants and ratoons of the succeeding season with a consciousness of capacity for our labors which shall be the sweetest and most constant reward of our toil, and surety for our success.

L. B. S.

SUGAR OF LOUISIANA. (1846.)—The cane is now cultivated and worked into sugar in nineteen parishes, to wit: Point Coupée, West Baton Rouge, East Baton Rouge, Iberville, Ascension, St. James, St. John the Baptist, St. Charles, Jefferson, St. Bernard, Plaquemines, Assumption, Lafourche Interior, Terrebonne, St. Mary, St. Martin, Lafayette, Vermillion, and St. Landry; and large preparations are making for its intro-

duction and manufacture in the following heretofore exclusively cotton parishes, to wit: Rapides, Avoyelles, Concordia, Catahoula and Calcasieu.

The extent of sugar lands embraced in the above parishes, and which could be put into cultivation at the ordinary expense of clearing and draining, would be sufficient to supply the whole consumption of the United States; and by applying to our low, flat lands, for a few years, the artificial draining of Holland, (and more particularly to the tract on our western coast, between the sea and the Mississippi,) lands enough could be reclaimed to supply, besides, the consumption of a large portion of Europe.

By state documents, in the archives of the French government, it appears that the culture of the cane was strongly recommended in the earliest days of the colony.

This valuable plant was first introduced from St. Domingo by the Jesuits; and it was cultivated on their plantation, where now stands the most flourishing part of suburb St. Mary, as early as 1725-6.

The species first imported was the Malabar, otherwise called Crystalline, or Creole cane. The next species was the Otaheite, sometime about the close of the last century. The third species was the Ribbon cane, in 1817; it was first introduced from Georgia, by a Mr. Coiron; it came, originally, from the East Indies, and presents a good many varieties; it is now the favorite plant, owing to its earlier maturity, and its resisting better an early winter—two very important qualities in this climate.

The manufacture of cane into sugar does not appear to have commenced before 1764, when samples were sent to the mother country from the estate of Chevalier de Mazan, near the city, on the opposite bank. The yield per acre was then stated to have been 3,000 lbs. and the quality was pronounced to be equal to that of St. Domingo muscovado.

The cession of Louisiana to Spain, at that epoch appears to have put a stop to that industry, for no farther traces of sugar-making are to be found until 1791, when the first sugar-house, under the Spanish government, was erected by a Mr. Solis, at Terre-au-Bœufs, in the parish of St. Bernard. The next was established in 1796, on a plantation situated where now stands Carrollton, and belonging to a Mr. Boré; it produced a crop of \$12,000, a sum considered at that epoch as very large. This result may be said to have laid the foundation of the sugar industry in Louisiana. Its progress, however, was at first extremely slow; and at the epoch of the cession of Louisiana to the United States, the number of sugar estates was very small, no doubt owing to the want of capital.

The statistics from 1803 to 1817 are so deficient, that it is extremely difficult to arrive at any correct data as to the progressive annual increase of the sugar crop during the above period.

The crop in 1818 had attained 25,000 hogsheads. Cattle was the only power, used up to that period.

In 1822, steam power was introduced; the first engines and mills cost about \$12,000, and were chiefly imported by Gordon and Forstall. This power, however, was used but by very few, until our own foundries placed it within the reach of all, by reducing its cost to \$5,000 or \$6,000.

The crop of—

1822-23	amounted to	30,000	hogsheads.
1823-24	"	32,000	"
1824-25	"	30,000	"
1825-26	"	45,000	"
1826-27	"	71,000	"
1827-28	"	87,965	"
1828-29	"	48,238	"
1829-30	"	73,000	"
1830-31	"	75,000	"
1831-32	"	75,000	"
1832-33	"	70,000	"
1833-34	"	75,000	"
1834-35	"	110,000	"
1835-36	"	36,000	"
1836-37	"	75,000	"
1837-38	"	—	no return.
1838-39	"	—	no return.
1839-40	"	119,947	hogsheads.
1840-41	"	120,000	"
1841-42	"	125,000	"
1842-43	"	140,316	"
1843-44	"	100,346	"
1844-45	"	204,913	"

Each hogshhead averaging 1,000 lbs. net, and yielding from 45 to 50 gallons of molasses.

Number of sugar estates in operation in 1827-8, 308, worked as follows:

Manual power, about	21,000	slaves.
Steam	82	engines.
Horse	226	
Capital invested, then estimated at about	\$34,000,000	

Number of sugar estates in operation or preparing to work, in 1830, 691:

Manual power, about	36,000	slaves.
Steam	282	engines.
Horse	409	
Capital then invested, estimated at about	\$50,000,000	

Number of sugar estates in operation in 1841-2, 668:

Manual power, as ascertained by the last federal census	50,670	slaves.
Steam	361	engines.
Horse	307	

Number of sugar estates in operation in 1843-4, 762:

Manual power, at least	50,670	slaves.
Steam	408	engines.
Horse	354	
Capital invested, estimated at about	\$60,000,000	

It has been ascertained by Mr. Champomier, in a late excursion throughout the state, that not less than 410 cotton estates are now in full preparation to go into the sugar business.

The tariff of 1842 has truly created a new era for the sugar industry. No doubt it will

now be seen in the ascendant until we shall have reached the full amount required for the consumption of the United States, which, at present, is not under 350,000,000 lbs. Until 1831, it was the general belief that Louisiana sugars were too weak for refining. Questioned upon this subject on the floor of Congress, the late Messrs. Edward Livingston and Josiah Johnson were compelled to confess that it was so. This supplied Messrs. Lea and other politicians of the east, with a most powerful argument to demand a reduction of the duty on sugars imported for refining, to wit: that no protection ought to be asked by Louisiana against an article it could not produce. This would have been a fatal blow to this state. At that epoch, however, Gordon and Forstall had just introduced into the state the *vacuo* process of Howard, and the argument of Mr. Lea and supporters was met by shipments of several hundred tons of sugar, refined from pure Louisiana, which obtained the medal in New-York. This, for the time being, put an effectual end to the crusade preparing against Louisiana.

Five or six years ago, two of our planters adopted the same process, and they have been eminently successful; not less than six estates are now upon the white system plan; and such are the improvements now going on, and the skill brought into action, that it requires no prophet to predict, that but few years can now elapse before Louisiana shall have it in her power to supply the whole Union with white sugars directly from the cane.—*E. J. Forstall.*

SUGAR OF FLORIDA.—The Jacksonville Florida News remarks: "We are happy to perceive that very general attention is being awakened to the vast profit which results to the cultivation of the sugar-cane in Florida. The climate and the atmosphere give us advantages over Louisiana, and there is no doubt that sugar can be made here equal in quality to any in the world.

"We extract the following paragraph from the National Intelligencer of the 25th ultimo. The cane to which it alludes, exhibited in the capitol, was some that was taken on by Hon. D. L. Yulee, senator of that state. We saw this cane when he passed through Jacksonville, and, although it is large, it is by no means of the size which it usually attains in good soil. We trust it will have the effect to enlighten those who have hitherto supposed that the sugar-cane was only grown in Louisiana.

"The sugar region in Florida extends from the 30th to the 25th degree of latitude. It comprises within its limits a large amount of very fine land. The climate of the most northern portion of it has, we understand, an advantage of six weeks in the duration of

the growing season over any other sugar-growing portion of the United States; and in the southernmost parts of the peninsula there is an entire exemption from frost. The cane is *tasseled* this season throughout the peninsula, a degree of maturity it does not attain in Louisiana or Texas. The lands are at present cheap, say from \$1 25 (the price of public lands) to \$10 per acre. There are numerous rivers affording easy transportation on both sides the peninsula. Public sales of some of the state lands will take place in February next. These lands have been carefully selected by agents in bodies of half a section (320 acres,) and are generally well situated for the sugar culture. A sample of the Florida cane of this year, now to be seen at the capitol, is between ten and eleven feet long, entirely divested of top, and was cut nearly a month ago, before it had attained its proper growth. Still larger canes than this, however, are grown in Florida."

The St. Augustine Herald gives the following interesting statement of the produce of 1 3-4 acres of land at Moccasin Branch, in St. John's county, which had been planted in cane by Mr. Paul Masters.

" 10 barrels of sugar, 250 lbs. each, at 6 cents.	\$150 00
100 gallons molasses, at 25 cents...	25 00
37 1-2 bushels of corn, at \$1.....	37 50
Cane sold.....	20 00
	<hr/>
	\$232 50

"This is at the rate of one hundred and thirty-three dollars to the acre, and was produced from high pine barren land, cow-penned. Mr. Masters is a poor man, without any negroes, and had only the assistance of a son of 18 years of age, to obtain the above together with an excellent crop of corn, peas and potatoes. Mr. Masters made his own mill, and boiled the juice down in a common pot in the open air.

" Mr. Francis Rogero, from 1 1-4 acres of same quality of land obtained fifteen barrels of syrup and two barrels of sugar. In value: 465 gallons syrup, at 31 cents....	\$144 15
500 lbs. sugar, at 6 cents.....	30 00
	<hr/>
	\$174 15

"This is at the rate of \$139 32 to the acre. When it is considered that this is the produce of the poorest quality of land, and that the sugar was manufactured in the rudest manner, no one can doubt that the sugar cane alone should be cultivated by the planters of Florida. There are hundreds of thousands of acres of the richest land in this state lying in small bodies, of from 100 to 1000 acres, which might produce far more abundantly than the above."

SUGAR—ITS PRODUCTION AND HISTORY. —Every day brings new evidences of the extension of the sugar culture in our country. In those parishes of Louisiana which have hitherto been exclusively *cotton*, the substitution of this staple is becoming rapid, and can only be checked by a rise in the value of its rival. Texas, with her abundant sugar lands, has already upward of forty estates in operation, and produced last year over ten thousand hhds. The culture is reviving in Florida, and being adopted on a small scale in parts of South Carolina, Georgia, Alabama and Mississippi. Doubtless, the insecurity of the lands upon the Mississippi will exercise an adverse influence. We have seen intelligent gentlemen, from the vicinity of Vera Cruz, who state that great improvements are taking place in the Mexican crops; and Mr. Poinsett stated, some months ago, in our Review, that, under a better government, the competition from this source would be very considerable. The crop in the British West Indies continues to decline, while in the Spanish colonies the reverse is the case. Should Cuba become independent, or be attached to the United States, it is not improbable her present crop would be doubled. It is now more than twice that of Louisiana. The consumption of sugar, all the world over, is increasing; and is stimulated by greater cheapness, growing out of rapid improvements in the culture and manufacture. In the result, the sugar from cane, from its superiority and economy, will drive out the competition of that from the beet and other plants.

The Western Democrat, at Alexandria, Louisiana, is publishing a series of papers upon the extension of sugar culture in the parish of Rapides, which are very interesting. This is a new epoch in the history of the staple. It appears that at a very early period attempts were made near Natchitoches, but without success. In 1824 Timothy Flint suggested the sugar culture in this region. In 1829 General Thomas made the experiment, and continued it four years, producing, at last, three hundred and three hhds. F. A. Bynum, George Gordon, John G. Young and William Dunwoody, also attempted it. An extraordinary frost, the low price of sugar and inflation of cotton, the deficiency of machinery rendering slow the process of manufacture, tended to discourage, and, at last, to put an end to the experiments. Things so remained until 1845, when E. H. Flint set the ball again in motion. He built a splendid sugar-house, made one hundred and sixty hhds., and seed for two hundred acres in 1847. Out of this seed, &c, the crop was five hundred and forty-one hhds.; and in 1848, seven hundred and sixty-four hhds. That of 1849 was lost by the overflow. The average yield was two hhds. an acre for plant

cane, and one hhd. for ratoons. This gentleman deserves the highest honor for his liberality and public spirit. The total crop of Rapides, last year, was sevent thousand nine hundred and twenty-eight hhds., made by the following persons: Calhoun, Compton, Wilson, Bullard, Bryce, Seip, Archinard, Flint, Overton and Prescott, Baillio, Williams, Flower, Moore, Burgess, Mulholland, Carnal, Martin, Clarke, Waters, Wells, Scott, Crouch, Pearce, Tanner, Stafford, Cheney, Chambers, Gould and Andebert, Carlin, Lambeth and Maddox, Bennett. There are eleven other planters who will make sugar next year, viz.: Williams, Texhada, Gordon, Bonner, Chambers, Linton, Chase and Mathews, Pearce, Curiton, Cheney, Wright. Four planters will produce the year after, viz.: Blanchard, Linton and Brothers, Pearce and Stewart, Taylor.

We have before us the admirable compilation, made by Mr. Champomier, of the sugar crop of Louisiana in 1849-50. It is a beautiful pamphlet, printed at the office of our friends of the New-Orleans Price Current. The price is five dollars, which, when one considers the immense pains and labor required, the enormous expense and small sale, will appear very reasonable. Mr. Champomier deserves every success, and should be rewarded by the support of the whole planting interest. His past labors have been appreciated at Washington.

Without interfering with the copy-right of this pamphlet, but rather to influence its extension and sale, we will digest a few particulars, showing its character, &c., having already extracted some of its statistics.

The sugar-cane is cultivated on both banks of the Mississippi, from fifty-seven miles below New Orleans to nearly one hundred and ninety miles above; on Red River, including Rapides and Avoyelles, the last of which produced, last year, 3,874 hhds.; on bayous Lafourche and tributaries, bayou Terrebonne, Little and Great Caillou, bayou Black, Teché, Sale, Atchafalaya and tributaries, Berwick bay, bayou Bœuf, bayou Vermillion; the prairies of St. Martin, Vermillion, &c.; Saint Landry, Calcasieu, bayou Courtableau, Toulouse, &c., &c. Whole number of sugar parishes, 24; number of sugar-houses, 1,536; number by steam, 865; the rest by horse. Crop 1849-50, 247,923 hhds., or 269,769,900 lbs., including cistern bottoms, used by the refiners. This, at an average of $3\frac{1}{2}$ cents, amounts to \$9,441,915; the quantity of molasses was 12,000,000 gallons, at 20, which amounts to \$2,400,000; total, \$11,841,915, or an average to each of the 1,455 *working* sugar-houses of \$8,148. It is impossible to give the number of slaves employed, though the reader will find, in vol. vi., page 456, of the Review, some interesting calculations in this particular. Sixty-

two new plantations will produce next year, and nineteen the year after. This latter number will, no doubt, be much increased. The overflow on the Mississippi and Red rivers, last year, shortened the crop near 20,000 hhds., and will be greatly felt for several years to come. St. Mary's produced the largest number of hhds.,—24,000 and over.

We cordially recommend Mr. Champomier's pamphlet to every reader of the Review, and express our high indebtedness to him for a copy, and for the privilege of making the above general statements upon his authority. The planters and merchants of Louisiana should take pride in supporting an annual publication so valuable. We extract, in conclusion, his instructive remarks, upon the contribution, made by Louisiana, to the industry of the nation :

"There have been put up, in this state, since 1846, including the present year, not less than 355 sugar mills and engines, furnished by the following foundries, viz. : Cincinnati foundries—J. Nyles & Co. 199, James Goodloe & Co. 45, David Griffe 37 ; Pittsburgh foundries—Arthur Armstrong & Co. 3, Jackson, Whiteman & Co. 32, Knapp & Totton 2—besides vacuum apparatus this latter firm has furnished already, and are now under contract, for the coming crop, for 8 or 10, perhaps more ; Richmond (Va.) foundry—J. R. Anderson, proprietor, 7 ; Baltimore (Md.) foundry—Wells & Miller, proprietors, 4 ; Louisville (Ky.) foundry—James Curry, proprietor, 3 ; Belleville iron works (Algiers, La.) 2 ; Phenix foundry, Gretna—Silvester Bennett, proprietor, 6 ; Leeds & Co., New-Orleans, 10 ; the Novelty Iron Works, of New-York—5 sugar mills and engines, 6 Durone's patent copper condensers, a good number of vacuum pans, and a considerable quantity of Stillman's patent clarifiers, evaporating and granulating pans. Philadelphia has furnished, and keeps furnishing, apparatus which I have lost sight of, making an aggregate of 355 mills and engines, of which, at least, 120 have replaced old ones. A great many horse-power mills have been made by the abovenamed foundries, more particularly by Goodloe, Griffe, and S. Bennett. However, the latter, as is the case with our local foundries, made but little new work, comparatively speaking ; the repairs they have to make every season, more particularly during grinding, when breakage so frequently occurs to the machinery, keeps them at work day and night."

We append, from an able English writer, the following historical sketch of sugar, which the reader will observe was written as long ago as 1832 or 1833 ; but it can readily be completed to date by inspection of the eight published volumes of our Review :

Historical Notice of Sugar.—The history of sugar is involved in a great deal of obscurity. It was very imperfectly known by the Greeks and Romans. Theophrastus, who lived about three hundred and twenty years before the Christian era, the first writer whose works have come down to us, by whom it is mentioned, calls it a sort of "honey extracted from canes or reeds." Strabo states, on the authority of Nearchus, Alexander's admiral, that "reeds in India yield honey without bees." And Seneca, who was put to death in the sixty-fifth year

of the Christian era, alludes (Epis. 84) to the sugar-cane in a manner which shows that he knew next to nothing of sugar, and absolutely nothing of the manner in which it is prepared and obtained from the cane.

Of the ancients, Dioscorides and Pliny have given the most precise description of sugar. The former says, it is "a sort of concreted honey, found upon canes, in India and Arabia Felix ; it is in consistence like salt, and is, like it, brittle, between the teeth." And Pliny describes it as "honey collected from canes, like a gum, white and brittle between the teeth ; the largest is of the size of a hazel nut ; it is used in medicine only." (*Saccharum et Arabia fert, sed laudatius India ; est autem mel in arundinibus collectum, gummi modo candidum, dentibus fragile, amplissimum nucis avellanae magnitudine, ad medicinal tantum usum.*—Lib. xii. c. 8.)

It is evident, from these statements, that the knowledge of the Greeks and Romans, with respect to the mode of obtaining sugar, was singularly imperfect. They appear to have thought that it was found adhering to the cane, or that it issued from it in the state of juice, and then concreted like gum. Indeed, Lucan expressly alludes to Indians near the Ganges :

Quinque bibunt tenera dulces ab arundine succos.—Lib. iii. 1., 237.

But these statements are evidently without foundation. Sugar cannot be obtained from the cane without the aid of art. It is never found native. Instead of flowing from the plant, it must be forcibly expressed, and then subjected to a variety of processes.

Dr. Mosely conjectures, apparently with much probability, that the sugar described by Pliny and Dioscorides, as being made use of at Rome, was sugar-candy obtained from China. This, indeed, is the only sort of sugar to which their descriptions will at all apply. And it would seem that the mode of preparing sugar-candy has been understood and practised in China from a very remote antiquity ; and that large quantities of it have been in all ages exported to India, whence, it is most probable, small quantities found their way to Rome—(*Treatise on Sugar*, 2d edit., p. 66-71. This, as well as Dr. Mosely's treatise on coffee, is a very learned and able work.)

Europe seems to be indebted to the Saracens, not only for the first considerable supplies of sugar, but for the earliest example of its manufacture. Having, in the course of the ninth century, conquered Rhodes, Cyprus, Sicily and Crete, the Saracens introduced into them the sugar-cane, with the cultivation and preparation of which they were familiar. It is mentioned, by the Venetian historians, that their countrymen imported, in the twelfth century, sugar from

Sicily, at a cheaper rate than they could import it from Egypt.—(*Essai de l'Histoire du Commerce de Venise*, p. 100.) The Crusades tended to spread a taste for sugar throughout the western world; but there can be no doubt that it was cultivated, as now stated, in modern Europe, antecedently to the era of the Crusades; and that it was also previously imported by the Venetians, Amalphitans, and others, who carried on a commercial intercourse, from a very remote epoch, with Alexandria and other cities in the Levant. It was certainly imported into Venice in 996.—(See the *Essai*, &c., p. 70.) The art of refining sugar, and making what is called loaf sugar, is a modern European invention, the discovery of a Venetian about the end of the fifteenth, or the beginning of the sixteenth century.—(Moseley, p. 66.)

The Saracens introduced the cultivation of the sugar-cane into Spain soon after they obtained a footing in that country. The first plantations were at Valencia; but they were afterward extended to Granada and Murcia. Mr. Thomas Willoughby, who traveled over a great part of Spain, in 1664, has given an interesting account of the state of the Spanish sugar plantations, and of the mode of manufacturing the sugar.

Plants of the sugar-cane were carried by the Spaniards and Portuguese to the Canary Island and Madeira, in the early part of the fifteenth century; and it has been asserted by many, that these islands furnished the first plants of the sugar-cane that ever grew in America.

But though it is sufficiently established, the Spaniards early conveyed plants of the sugar-cane to the new world, there can be no doubt, notwithstanding Humboldt seems to incline to the opposite opinion, (*Essai Politique sur la Nouvelle Espagne*.—Liv. iv. c. 10.) that this was a work of supererogation, and that the cane was indigenous, both to the American continent and islands. It was not for the plant itself, which flourished spontaneously in many parts when it was discovered by Columbus, but for the secret of making sugar from it, that the New World is indebted to the Spaniards and Portuguese, and these to the nations of the East.—(See Lafitau *Mœurs des Sauvages*, tome ii, p. 150; Edwards's *West Indies*, vol. ii, p. 238.)

Barbadoes is the oldest settlement of the English in the West Indies. They took possession of it in 1627, and so early as 1646 began to export sugar. In 1676, the trade of the Barbadoes is said to have attained its maximum, being then capable of employing four hundred sail of vessels, averaging one hundred fifty tons burden.

Jamaica was discovered by Columbus, in his second voyage, and was first occupied

by the Spaniards. It was wrested from them by an expedition sent against it by Cromwell in 1656; and has since continued in our possession, forming by far the most valuable of our West Indian colonies. At the time when it was conquered, there were only three small sugar plantations upon it. But, in consequence of the influx of English settlers from Barbadoes and the mother country, fresh plantations were speedily formed, and continued rapidly to increase.

The sugar-cane is said to have been first cultivated in St. Domingo, or Hayti, in 1506. It succeeded better there than in any of the West Indian Islands. Peter Martyr, in a work published in 1530, states, that, in 1518, there were twenty-eight sugar works in St. Domingo established by the Spaniards, "It is marvelous," says he, "to consider how all things increase and prosper in the island. There are now twenty-eight sugar presses, wherewith great plenty of sugar is made. The canes or reeds wherein the sugar groweth are bigger and higher than in any other place; and are as big as a man's wrist, and higher than the stature of a man by the half. This is more wonderful, that whereas, in Valencia, in Spain, where a great quantity of sugar is made yearly, whensoever they apply themselves to the great increase thereof, yet doth every root bring forth not past five or six, or at most seven, of these reeds; whereas, in St. Domingo, one root beareth twenty, and oftentimes thirty."—*Eng. trans.* p. 172.

Sugar from St. Domingo formed, for a very long period, the principal part of the European supplies. Previously to its devastation, in 1790, no fewer than sixty-five thousand tons of sugar were exported from the French portion of the island.

Sources from whence the Supply of Sugar is derived.—The West Indies, Brazil, Surinam, Java, Mauritius, Bengal, Siam, the Isle de Bourbon, and the Philippines, are the principal sources whence the supplies required for the European and American markets are derived. The average quantities exported from these countries during each of the three years ending with 1833, were nearly as follows:

British West Indies, including Demerara and Berbice	tons 190,000
Mauritius	30,000
Bengal, Isle de Bourbon, Java, Siam, Philippines, &c.	60,000
Cuba and Porto Rico	110,000
French, Dutch, and Danish West Indies	95,000
Brazil	75,000
	<hr/> 560,000

Loaf or lump sugar is unknown in the East—sugar-candy being the only species of refined sugar that is made use of in India, China, &c. The manufacture of sugar-candy is carried on in Hindoostan, but the process is extremely rude and imperfect. In China,

however, it is manufactured in a very superior manner, and large quantities are exported. When of the best description, it is in large, white crystals, and is a very beautiful article. Two sorts of sugar-candy are met with at Canton, viz., Chinchew and Canton—the former being the produce of the province of Fokien, and the latter, as its name implies, of that of Canton. The Chinchew is by far the best, and is about fifty per cent. dearer than the other. Chinese sugar-candy is consumed, to the almost total exclusion of any other species of sugar by the Europeans, at the different settlements throughout the East. There were exported from Canton, in 1831–32, by British ships, 32,279 piculs (38,427 cwt.) of sugar-candy, valued at \$243,000, and 60,627 piculs (72,175 cwt.) of

clayed sugar, valued at \$318,256; and, during the previous year, the exports were about fifty per cent. greater, (see vol. i, page 302–303.) The exports by the American are also considerable. At an average, the exports of sugar from Canton may be taken at from six to ten thousand tons; but of this only a small quantity finds its way to Europe. The exports from Siam and Cochin-China are estimated at about twelve thousand five hundred tons.

Consumption of Sugar in Europe, &c.—Mr. Cook gives the following table of the imports of sugar into France, and the principal continental ports, in 1831, 1832, and 1833, and of the stock on hand on the 31st of December of each of these years:

	IMPORTS.			STOCK 31st DECEMBER.		
	1831 Tons	1832 Tons	1833 Tons	1831 Tons	1832 Tons	1833 Tons
France.....	97,450	82,000	79,500	25,870	9,350	10,450
Trieste.....	17,950	22,400	13,800	6,900	11,900	6,840
Genoa.....	9,500	10,500	6,800	1,500	2,200	2,180
Antwerp.....	5,240	8,780	12,800	2,000	2,000	5,100
Rotterdam.....	10,700	11,600	8,650	1,800	3,900	3,350
Amsterdam.....	18,370	22,380	20,100	2,200	3,400	5,300
Hamburgh.....	38,800	37,930	30,000	9,000	13,400	9,820
Bremen.....	12,380	12,500	7,350	3,230	5,800	3,550
Copenhagen.....	5,350	5,850	5,560	800	2,370	1,830
Petersburgh.....	11,170	33,100	18,500	8,840	11,660	15,600
	226,910	237,040	203,060	61,740	65,980	64,020

This table does not, however, give the imports into many of the ports of the Peninsula; but the consumption of Spain, only, has been estimated, apparently on good grounds, by Montveran, (*Essai de Statistique sur les Colonies*, page 92,) at 45,000,000 kilog. (41,050 tons.) This may appear large for a country in the situation of Spain, but the quantity is deduced from comparing the imports with the exports; and it is explained partly by the moderation of the duties, and partly by the large consumption of cocoa, and other articles that require a corresponding consumption of sugar. Mr. Cook's table also omits the imports into Leghorn, Naples, Palermo, and other Italian ports. Neither does it give those into Set-

ten, Königsberg, Riga, Stockholm, Gottenburgh. It is, besides, very difficult, owing to transshipments from one place to another, accurately to estimate the real amount of the imports. On the whole, however, we believe that we shall be within the mark, if we estimate those for the whole continent at from 285,000 to 310,000 tons, including what is sent from England.

The following table, compiled from the best authorities, exhibits the total consumption of colonial and foreign sugars in France, at different periods, since 1788, with the population, and the average consumption of each individual (see Montveran, *Essai de Statistique*, page 96, and the authorities there referred to):

Years	Consumption	Population	Individual Consumption
1788.....	21,300,000 kilog.	23,600,000	.906 kilog.
1801.....	25,200,000 "	31,000,000	.813 "
1812.....	16,000,000 "	43,000,000	.272 " *
1816 to 1819, average.....	36,000,000 "	30,000,000	1.200 "
1819–1822.....	47,000,000 "	30,833,000	1.566 "
1822–1824.....	47,250,000 "	31,103,000	1.513 "
1824–1825.....	55,750,000 "	31,280,000	1.782 "
1826–1827.....	62,500,000 "	31,625,000	1.976 "
1830.....	67,250,000 "	31,845,000	2.126 "

* Continental system and empire.

This, however, is independent of the consumption of indigenous sugar, and of the sugar introduced by the contraband trade, both of which are very considerable. The entire consumption of all sorts of sugar in

France, in 1832—including from 8,000,000 to 9,000,000 kilog. of beet-root sugar, and allowing for the quantity fraudulently introduced, may be estimated at about 88,000,000 kilog., or 193,000,000 lbs.; which, taking the pop-

ulation at 32,000,000, gives an average consumption of six pounds to each individual—being about one-fourth part of the consumption of each individual in Great Britain! This extraordinary discrepancy is no doubt ascribable to various causes: partly to the greater poverty of the mass of the French people; partly to their smaller consumption of tea, coffee, punch, and other articles that occasion a large consumption of sugar; and partly and principally, perhaps, to the oppressive duties with which foreign sugars are loaded, on their being taken into France for home consumption.

The United States consume from 70,000 to 80,000 tons; but of these from 30,000 to 40,000 tons are produced in Louisiana.

About 170,000 tons of sugar are retained for home consumption, in Great Britain, and 17,000 tons in Ireland, exclusive of about 12,000 tons of bastard, or inferior sugar, obtained by the boiling of molasses; and exclusive, also, of the refuse sugar and treacle remaining after the process of refining.

On the whole, therefore, we believe we may estimate the aggregate consumption of the continent, and of the British islands, at about 500,000 tons a year; to which if we add the aggregate consumption of the United States, Turkey, &c., the aggregate will be nearly equivalent to the supply. The demand is rapidly increasing in most countries; but, as the power to produce sugar is almost illimitable, no permanent rise of prices need be looked for.

Taking the price of sugar at the low rate of £1 4s. a cwt., or £24 a ton, the prime cost of the article to the people of Europe will be £12,000,000; to which adding 75 per cent. for duty, its total cost will be £21,000,000. This is sufficient to prove the paramount importance of the trade in this article. Exclusive, however, of sugar, the other products of the cane—as rum, molasses, treacle, &c.—are of very great value. The revenue derived by the British treasury, from rum only, amounts to nearly £1,600,000 a year.

Progressive Consumption of Sugar in Great Britain.—We are not aware that there are any authentic accounts with respect to the precise period when sugar first began to be used in England. It was, however, imported, in small quantities, by the Venetians and Genoese, in the fourteenth and fifteenth centuries,* but honey was then, and long after, the principal ingredient employed in sweetening liquors and dishes. Even in the early part of the seventeenth century, the quantity of sugar imported was very inconsiderable, and it was made use of only in

the houses of the rich and great. It was not till the latter part of the century, when coffee and tea began to be introduced, that sugar came into general demand. In 1700, the quantity consumed was about 10,000 tons, or 22,000,000 lbs. At this moment, the consumption has increased (bastards included,) to above 180,000 tons, or more than 400,000,000 lbs.; so that sugar forms not only one of the principal articles of importation and sources of revenue, but an important necessary of life.

Great, however, as the increase in the use of sugar has certainly been, it may, we think, be easily shown, that the demand for it is still very far below its natural limit; and that, were the existing duties on this article reduced, and the trade placed on a proper footing, its consumption, and the revenue derived from it, would be greatly increased.

During the first half of the last century, the consumption of sugar increased fivefold, and amounted, as already stated,

	Tons		Pounds
In 1700, to	10,000	or	22,000,000
1710, to	14,000	or	31,360,000
1734, to	42,000	or	94,800,000
1754, to	53,370	or	119,320,000
1770-1775, to	72,500 (average)	or	162,500,000
1786-1791, to	81,000	or	181,500,000

In the reign of Queen Anne, the duty on sugar amounted to 3s. 5d. per cwt. Small additions were made to it in the reign of George II.; but, in 1780, it was only 6s. 8d. In 1781, a considerable addition was made to the previous duty, and, in 1787, it was as high as 12s. 4d. In 1791, it was raised to 15s.; and, while its extensive and increasing consumption pointed it out as an article well fitted to augment the public revenue, the pressure on the public finance, caused by the French war, occasioned its being loaded with duties, which, though they yielded a large return, would, there is good reason to think, have been more productive, had they been lower. In 1797, the duty was raised to 17s. 6d.; two years afterward, it was raised to 20s.; and, by successive augmentations, in 1803, 1804 and 1806, it was raised to 30s.; but, in the last-mentioned year, it was enacted, that, in the event of the market price of sugar in bond, or exclusive of the duty, being, for the four months previous to the 5th of January, the 5th of May, or the 5th of September, below 49s. a cwt., the lords of the treasury might remit 1s. a cwt. of the duty; that, if the price were below 48s., they might remit 2s., and, if below 47s., they might remit 3s., which was the greatest reduction that could be made. In 1826, the duty was declared to be constant at 27s., without regard to price; but it was reduced, in 1830, to 24s., on West India sugar, and to 22s. on East India sugar.

* In Martin's *Storia del Commercio de Veneziani*, (vol. v., page 306,) there is an account of a shipment made at Venice for England, in 1319, of 100,000 lbs. of sugar, and 10,000 lbs. of sugar-candy. The sugar is said to have been brought from the Levant.

SUGAR AND ITS USES.—The French people are great eaters of sugar, always carrying some of it about with them, in their pockets and reticules, and generally putting five or six lumps into each cup of coffee. M. Chessat reports that sugar, when used as the exclusive, or principal article of diet, produces quite opposite effects in persons, according to the difference in their systems; for, while it fattens some, it creates bile, which induces a diarrhea, and a wasting of the solids, in other persons. The celebrated Bolivar had, by fatigue and privations, so injured the tone of his stomach, that he was unable, at times, to take any other food than sugar, which, in his case, was easy of digestion. His personal friends assure us, that, in some of his last campaigns, he lived, for weeks together, upon sugar alone, as a solid, with pure water as a liquid; but, probably, in nine hundred and ninety-nine cases out of a thousand, this diet would soon have brought the person adopting it to his grave; for, on those whose digestion is feeble, a large, or exclusive, allowance of sugar adds to their grievance, because the excess of nutriment, not being generally absorbed by their weakened system, becomes converted to bile, and causes great debility and wasting of the body. In seventeen experiments, made on dogs, M. Chessat observed, that, when the sugar diet fattened them, there was a general tendency to constipation meanwhile; and, on the contrary, when it produced an excess of bile in other dogs, their bowels were relaxed. Why English children suffer, in their digestion, after eating largely of sugar-plums, comfits, &c., is chiefly owing, however, to those delicacies being composed of the refuse of starch works, mixed with plaster of Paris, pipe-clay and chalk, and having, indeed, as little sugar as will suffice to give them a palatable sweetness; and they are often colored with gamboge; and, sometimes, with red lead, verdigris, and other mineral poisons.

Everywhere, the beasts of the field, the reptiles, the fish and insects, are found to have a great liking for sugar and honey. Mr. Martin says he has tamed the most savage and vicious horses with sugar, and has seen the most ferocious animals domesticated by being partly fed upon it. The tamers of lions and tigers owe their power over them chiefly to a judicious use of sugar, and other sorts of sweets, and, also, of lavender water, and various other perfumes, of which feline animals are remarkably fond. In the sugar season, in the West Indies, the horses, mules and cattle, soon acquire a plumpness and strength by partaking of the leaving of the sugar canes, after the manufacturer has done with them. In Cochin-China, the elephants, buffaloes and horses, are all fattened with sugar. We learn, from the "Memoirs

of Dr. Edw. Dartwright," (1843,) that this ingenious man used to fatten sheep on sugar. To birds, this diet proved so nourishing, that the suppliers of the European poultry markets find that sugar, along with hemp-seed and boiled wheat, will greatly fatten ruffs and reeves in the space of a fortnight.

SUGAR—THE EARLY HISTORY OF.—The following communication was sent us by A. G. Summer, Esq., of South Carolina, received by him from his brother, Thomas J. Summer, member of the Literary and Scientific Society of Giesin, and who is pursuing Agricultural Chemistry under Liebig, Rosa and Mulder.

Dr. Weill says, that as far as he has observed there is no allusion made to sugar in the Old Testament. The conquests of Alexander seem to have opened its discovery to the Western world. Strabo says that Nearchus, his admiral, found sugar-cane in the East Indies, but does not say that even art was used to reduce the juice of this plant to gum. Strabo also quotes Eratosthenes, as speaking of roots of large reeds in India, which were of sweet taste, both raw and when boiled. Theophrastus, we next find, had some knowledge of sugar, for in naming the different kinds of honey, he mentions one found in reeds. Varro, in a fragment quoted by Isidorus, alludes to this substance, when he says it was as a fluid, pressed out from reeds of a large size, which was sweeter than honey. Dioscorides, speaking of the different kinds of honey, says there is one sort, in a concrete state, called *Saccharon*, which is found in the reeds of India and Arabia Felix. This, he adds, has the appearance of salt; and, like that, is bitter when chewed in the mouth. It is beneficial to the bowels and stomach, if taken dissolved in water; and is also useful in diseases of the bladder and kidneys. Being sprinkled on the eye, it removes those filmy substances that obscure the sight. This I regard as the first account extant of the medical properties of sugar.

Galen was well acquainted with the use of sugar, and describes it similarly with the above, as a kind of honey, called *Sacchar*, that came from India and Arabia Felix, and concreted in reeds. He says it is less sweet than honey, but of similar qualities, as detergent, desiccative, and digerent. He observes the difference, however, that sugar is not like some honey, injurious to the stomach, or productive of thirst, but on the contrary always occasions internal irritation.

In the third book of Galen, treating of medicines easily procured, sugar is repeatedly prescribed.

Lucan speaks of the sweet juice drawn from reeds, which constituted a drink for the

people of India. Seneca, speaks also of an oily sweet juice in reeds. Pliny mentions it as *saccharon*, and says it was brought from Arabia and India; but the best came from the latter country. He describes it as a kind of honey obtained from reeds, of a white color resembling gum, brittle when pressed by the teeth, and found in pieces of the size of a hazlenut. It was used in medicine only.

Salmasius, in his *Plinianæ Exercitationes*, says, Pliny relates upon the authority of Juba the historian, that some reeds grew in the Fortunate Islands, which increased to the size of trees, and yielded a liquor that was sweet and agreeable to the palate. Though he implies that this plant was the sugar-cane, I think the plant intended by Pliny was some one of the milk-producing trees of the African tropics. Before this period we had no account of the artificial boiling, or the application of the evaporating process to sugar, but Statius alludes to the boiling of sugar, and the passage is referred to in the celebrated *Thesaurus* of Stephens.

Arrian, in his *Periplus* of the Red Sea, speaks of the honey of reeds, called *sacchar*, as one of the articles of trade between Ariac and Barygaza, two places of the hither India, and of some parts of the Red Sea. Ælian, in his *Natural History*, speaks of a kind of honey, pressed from reeds that grew among the Prassi, a people who lived near the Ganges. Tertullian also speaks of sugar in his book *De Iudicio Dei*, as a kind of honey procured from canes. Alexander Aphrodisæus states, that sugar was regarded in his time as an Indian production. What the Indians called sugar then, was a concretion of honey, in reeds resembling crystals of salt, of a white color, brittle, and possessing a detergent and purgative power like honey; and which being boiled in the same manner as honey, is rendered less purgative, without impairing its nutritive quality.

Paulus Ægineta, makes the first mention of sugar growing in Europe; and also speaks of its being brought from Arabia Felix; the latter he seemed to think less sweet than the sugar raised in Europe, and neither injurious to the stomach nor causing thirst, as the European sugar was apt to do. I regret that I can't fix the date at which this author wrote. Achmet, an Eastern writer who is said to have lived about the year 830, speaks frequently of sugar as common in his time. Avicenna, the Arab physician, also speaks of sugar as being the produce of reeds, which he calls *tabîxer* or *tabarzet*.

It does not appear that down to this time the world was acquainted with the method of preparing sugar, by boiling down the juice of the canes to a consistence. It is also thought that the sugar they had, was not derived from the sugar-cane now cultivated,

but from a coarser and larger variety, known to the ancient world, called by Avicenna, *tabarzet*, which is the *arundo arbor* of Casper Bauhen, the *sacchar mamba* of later authors, and the *arundo bambos*, of Linnæus. This yields, even at the present day, a sweet, milky juice, which freely crystallizes in the sun's rays, and resembles sugar both in taste and appearance. It is similar if not identical with gum manna, and I think we must date the commencement of the cultivation of sugar as we know it with the Crusaders. This period opened to the world the riches of the "*far orient*." Even the "*Golden Fleece*" had stopped at Colchis, but it was for the Crusaders to transport useful arts, tastes, refinement, and even disease from the Holy Land, to all portions of Central and Western Europe. In the history of those days, romance and chivalry held a sway which almost obscures the details of those useful arts which went home with the mail-clad soldiers of the Holy Sepulchre. But the student, by groping in the massive rubbish of centuries, if he perseveres, can still, now and then, place his finger on a point in the progress of any art which existed at that time, and in searching for these points is often rewarded by discoveries which show the inception of wonderful events which have since transpired. I turned my inquiries from the tomes of the times preceding the Crusaders to the historians of those infatuated expeditions, and in the *Historia Hierosolymitana* found that the Crusaders discovered in Syria certain reeds called *canno-meles*, of which a kind of wild honey was made. Albertus Agnensis, writing about the same period, says that "the Crusaders found sweet honeyed reeds in great quantities in the meadows about Tripoli, in Syria, which reeds were called *zucra*. These reeds were sucked by them, and they were much pleased with their sweet taste, with which they could be scarcely satisfied. This plant is cultivated with great labor of the husbandman every year. At the time of harvest, they bruise it when ripe in mortars, and set the strained juice in vessels till it is concreted in the form of snow, or white salt. This, when scraped, they mix with bread, or rub it with water, and take it as pottage; and it is to them more wholesome and pleasing than the honey of bees. The people who were engaged in the sieges of Albaria Marra and Archas, suffered dreadful hunger, and were much refreshed thereby." He also mentions, in his account of the reign of Baldwin, that eleven camels, laden with sugar, were captured by the Crusaders, and from this we infer it was then made in considerable quantities.

In the works of Jacobus de Vitriacco, is to be found the first account of the employment of heat or fire in the making of sugar, for

he says, "that in Syria reeds grow that are full of honey, or a sweet juice, which by the pressure of a screw engine, and concreted by fire, becomes sugar. Wilhelmus Tyrensis, about the same period, speaks of "sugar as made in the neighborhood of Tyre, and sent to the farthest ports of the world."

Marinus Sanatus says, that in the countries subject to the Sultan, sugar was produced in large quantities, and that it was likewise made in Cyprus, Rhodes, Amorea, Malta, Sicily, and other places belonging to Christians.

Last of all, Hugo Falcandus, who wrote in the days of Frederic Barbarossa, speaks of sugar being produced in great quantities in Sicily, where it was used in two states; one, when the juice was boiled down to the consistence of honey, the other when it was boiled still farther down so as to form a solid body of sugar.

Here, when revolution and the turbulent spirit of Frederic shook the whole of Europe, was consummated that skill which has since furnished to our sugar regions a basis for the wonderful chemical discoveries which have engaged their attention up to the present time. How much the art of manufacturing sugar is yet to be improved can only be imagined, when we review the events which have accelerated its production since the twelfth century. I feel much satisfaction in addressing these historical transcripts to one of my fellow-citizens who is largely interested in the culture of sugar. Depend upon it, my dear sir, the only thing the sugar planters should call to their support is the aid of science. With this, and the healthy energy of American enterprise, they will outstrip the world in the production of every staple which engages their attention and occupies their labor.

From the Hon. Joel R. Poinsett.

JUNE 25, 1847.

Sugar is a fruitful subject. Of course, you are aware of the vast advantage possessed over us in the West Indies, where, from the cane maturing, the juice is many times stronger than in our colder region. Within the tropics it takes eighteen months to mature, and I think the comparative strength of the juice with that raised in colder climates, it is as eight to one. Sugar is cultivated successfully in Peru, and constitutes the chief article of export. It is sent to Chili, in exchange for flour. The sugar of Peru is clayed, and not well refined.

In Mexico it is raised in the Tierra Templada, and Tierra Caliente; chiefly in the valleys of Cuatla and Cuemavaca, about twenty leagues from the capital; although it might be cultivated to almost any extent, as the soil and climate of many parts of

Mexico are peculiarly favorable to its production. Indeed, it was cultivated formerly much more extensively in the neighborhood of the coast, where the lands were more productive than those even of the island of Cuba, and the juice of the cane much richer in saccharine matter; but the works were destroyed on most of the estates during the civil wars of the revolution, and they are too costly to be renewed. The consumption of sugar in the country is enormous, and the quantity made barely suffices for home use.

If Mexico is to be Americanized, and sugar raised there to be brought into competition with that of Louisiana, the latter will have to abandon that source of profitable culture. An experiment, recorded by Humboldt, gave double the quantity of sugar raised on the coast of Mexico, to that raised on the same area in Cuba. "A hectane of the best land in Vera Cruz produces 5,600 pounds of raw sugar, or exactly double the quantity obtained from the same space of ground in Cuba." The sugar used in Mexico, like that of Peru, is badly refined and has a coarse appearance. The cane is planted closer together than is customary in the English West India islands; but they rest their lands, planting only one-fourth each year—a system that maintains their fertility unimpaired.

I am, dear sir, very truly yours.

SUGAR CULTURE IN TEXAS.—There are at present twenty-nine sugar plantations in Brazoria county, each having substantial buildings and machinery for the preparation of the cane-juice for market. Col. Morgan L. Smith's establishment ranks highest in the scale of cost, as it does in estimable pretensions, to produce a refined article of the highest character, having in combination the latest improvements that genius and intellect have as yet devised for the fabrication of sugar. Col. Smith's perseverance, enterprise and energy will, I have no doubt, surmount every difficulty that is likely to obstruct the progress of his great and laudable design, if at all practicable. His personal exertions and general character merit the enjoyment of a most brilliant success.

As the costs of the establishments are not uniformly the same, they are classed in the following schedule, according to their estimated value—as, one at \$50,000; eight at \$20,000; six at \$15,000; two at \$12,000; one at \$10,000; one at \$8,000; ten at \$5,000—the number of sugar-houses, and the cost multiplied into each other. In the next column, the estimated value of the hands employed on the plantation; the next, the supposed number of acres cultivated, with the very low average price of twenty dollars per acre—giving an aggregate of \$1,134,000, the amount of capital invested in the cultivation of sugar-cane, &c., in Brazoria county at this

time. These figures are by no means exaggerated, for it is confidently believed they are rather below than above the actual amount of a close calculation :

SCHEDULE.

No. of Sugar Houses	Value of each Sugar House	Aggregate value of Sugar Houses	Value of Negroes	No. of Acres	Value of Land	Total
1	\$50,000	\$50,000	\$60,000	200	\$4,000	114,000
8	20,000	160,000	330,000	1,800	36,000	526,000
6	15,000	90,000	103,000	580	11,000	204,000
2	12,000	24,000	35,000	250	5,000	64,000
1	10,000	10,000	10,000	100	2,000	22,000
1	8,000	8,000	12,000	100	2,000	22,000
10	5,000	50,000	115,000	850	17,000	182,000
29		\$392,000	\$665,000	3,880	\$77,000	1,134,000

The manufacture of sugar in Texas is yet in the incipient stage of success. The culture of cane, until within a few years past, was quite limited; a few small patches were cultivated in the vicinity of Bexar de San Antonio, in olden times, for family use, in the form of a peloncus. Mr. Stafford, of Fort Bend county, was the first to erect permanent works for its manufacture in Austin's colony, in 1834, but the buildings were burned to the ground, and the machinery destroyed by the Mexican army, during the sanguinary eruption of 1836. But it is to an adventitious experiment made by Mr. Eli Mercer, of the Egyptian settlement, Wharton county, on the Rio Colorado, seventy miles in the interior, that the first "partial essay is indebted for the origin of our sugar doings."

The extreme scarcity of foreign productions in the colonies, previous to the revolution, induced this gentleman to make an attempt at sugar making—at least enough for his own family consumption—in 1833, '34. With the assistance of his two sons—yet in boyhood—and one negro, he cultivated, in addition to his usual potato and corn patch, not only enough for his own family use, but he supplied the whole population of Egypt with sweetening. His apparatus was wholly domestic—the live oak rolling-mill was constructed by himself, from the stump, and the

largest flesh-pots of Egypt were arrayed "all round in a row," as an evaporating battery, under the attentive ministration of the family circle. Although producing an article not unlike Mississippi alluvion steeped in molasses, it brought a goodly price into the hard, close hand of the honest Eli Mercer. Urged on by successful sales, the incorrigible Eli extended the limits of his cane patch; by experience, gained some celebrity in his new craft, while the saccharine qualities of the soil and climate were successfully developed to his advantage, and that of his successors, for ages. He is now enabled to enjoy the fruit of his persevering industry, with peace and plenty around him, under his own vine and fig-tree. But more likely, if yet alive, you may find him rusticated under the shade of some neighboring gnarled post-oak, poring over the Proverbs of Solomon, or the Psalms of David in metre.

SUGAR OF LOUISIANA.—We have made up some statistics from the tables of Mr. Champomier, which were published for several years. This gentleman collected his facts by correspondence and personal attendance; and though he may have been led into many errors, they are altogether too unimportant to affect the general results. Nothing so reliable can be had from any other source.

LOUISIANA SUGAR STATISTICS.

Parishes.	Sugar Houses, No.		Products, bbls.		Average product Sugar House		Planters, No.
	1844-5	1845-6	1844-5	1845-6	1844-5	1845-6	
Pointe Coupee	5	40	888	1,206	173	300	51
West Baton Rouge	19	52	4,247	4,961	230	95	78
East Baton Rouge	18	35	4,474	4,222	240	120	54
Iberville	69	116	16,463	15,624	230	134	194
Ascension	48	63	19,223	16,906	400	264	96
St. James	67	81	21,519	17,515	310	216	197
St. John	55	61	13,575	9,909	230	165	145
St. Charles	37	39	12,532	10,650	320	273	94
Jefferson	24	29	11,218	7,541	460	260	49
St. Bernard and Orleans	23	26	6,941	5,670	260	210	47
Plaquemines	36	45	14,761	11,321	400	251	77
Assumption	62	137	11,990	12,076	175	88	206
Lafourche	49	98	14,205	11,116	280	113	164
Terrebonne	42	78	12,661	12,080	290	164	104
St. Mary	147	179	18,795	24,722	120	132	283
St. Martin	36	69	4,419	5,246	120	76	115
Lafayette	4	7	372	365	90	52	11
Vermilion	13	19	862	1,176	65	61	33

LOUISIANA SUGAR STATISTICS—continued.

Parishes	Sugar Houses, No.		Product, hhd.		Average product Sugar House		Planters, No.
	1844-5	1845-6	1844-5	1845-6	1844-5	1845-6	1845-6
St. Landry	8	26	1,179	1,352	130	52	37
Red River Parishes of Avo- yelles, Rapides Catahoula, Concordia	—	27	—	—	—	—	29
Calcasieu	—	11	—	119	—	10	11
West Feliciana	—	2	—	—	—	—	4
Cistern Sugar	—	—	—	9,876	—	—	—
Total	764	1,240	191,324	186,650	250	150	2,077

PRODUCT SUGAR HOUSES.

	1845	1846
Producing 1000 hogsheads and over	8	—
" 900 "	3	2
" 800 "	8	1
" 700 "	20	4
" 600 "	20	18
" 500 "	48	20
" 400 "	45	46
" 300 "	99	98
" 200 "	104	154
" under 200 "	407	897

PLANTERS PRODUCING OVER 1000 HHDS.*

H. McCall	1,019
D. F. Kenner	1,156
Brengiers	1,170
Valcour Aime	1,152
Henry Doyle	1,539
Garcia & Co.	1,015
L. Labranche	1,016
L. Millandon, (3 estates)	2,035
Preston, (2 estates)	2,324

Thus, nine planters produced as much as the 81 planters of St. Martin's, Lafayette, St. Landry, Vermillion and West Baton Rouge, and one-sixteenth of the whole crop.

About 160 planters produced one-half of the whole crop.

It is to be observed, however, that many planters have interests in other estates than their own, and others have estates in different parishes. Several have often an interest in the same estate.

Adding the cistern bottom sugars, used by the refiners, the crop of 1844-5 exceeded

200,000 hogsheads. The number of steam sugar-mills that year was 408, the rest being horse. Whole number of planters then, 900.

The estimate of 1845-6 includes the cistern bottoms. Mr. Champomier estimated there would be in operation in 1847, from returns made to him, 1,240 sugar-houses, owned by 2,077 proprietors. They appear in our table of 1846 as *in progress*; 204 expecting to work in '46 and '47, and 81 in '47 and '48. From the stimulant given to the sugar culture from the high prices of 1847, and the very low rates of cotton in 1848, the new bayou and river lands taken into cultivation, and especially the region on the Red River, the whole number of sugar-mills in Louisiana in 1849-50, will scarcely fall short of 1,500. About one-half of the mills are by horse-power, though steam is being rapidly substituted.

If we consider the whole territory of Louisiana, and compare the country south of Rapides Parish, excluding the Florida parishes, we shall find about one-half of the state adapted to the sugar culture. Probably not one-twentieth is now cultivated in sugar. There are many parishes in which it is not cultivated at all. 120,000 out of 200,000 hogsheads, which the state produces, are made by the parishes on the river above and below the city. The crops of Red River parishes, the present year, we have not learned, but, from 30 houses, may estimate 7,000 hogsheads, perhaps 10,000.

SUGAR PRODUCTION IN LOUISIANA, 1851-'52.

Names of Parishes	No. of Sugar Houses	No. by Steam Power	No. by Horse Power	No. of hhd. Sugar
1. Rapides	46	34	12	10,127
2. Avozelles	30	15	15	3,398
3. West Feliciana	20	18	2	5,894
4. Pointe Coupee	65	58	7	7,187
5. East Feliciana	14	14	—	1,645
6. West Baton Rouge	57	48	9	10,842
7. East Baton Rouge	53	43	10	7,076
8. Iberville	133	111	22	15,835
9. Ascension	62	52	10	14,034
10. St. James	85	70	15	17,719
11. St. John the Baptist	67	47	20	10,920
12. St. Charles	38	37	1	9,629
13. Jefferson	29	29	—	7,775
14. Orleans and St. Bernard	25	25	—	5,773
15. Plaquemines	45	45	—	12,345
16. Assumption—Bayou Lafourche	146	51	95	18,001
17. Lafourche Interior	76	46	30	11,681

* For every hogshead of sugar one barrel of molasses is produced.

Names of Parishes	No. of Sugar Houses	No. by Steam Power	No. by Horse Power	No. of hhds Sugar
18. Terrebonne,	91	51	40	13,498
19. St. Mary—Attakapas.....	188	62	126	27,379
20. St. Martin	95	17	78	6,052
21. Vermillion—Lafayette.....	22	2	20	730
22. Lafayette	19	2	17	783
23. St. Landry—Opelousas.....	66	36	32	4,420
Divers small parcels, made in hogsheds and barrels, in different sugar-houses, not reckoned.....	—	—	—	3,600
Cistern bottoms of 203,922 hogsheds brown sugar, at an estimate, say of five per cent.....	—	—	—	10,204
Total	1,474	914	560	236,547
Estimated at.....	257,138,000 lbs.			
Brown sugar made by the old process				203,922 hhds.
Refined, clarified, &c., including cistern				32,625 "
Total				236,547 "

The above statistics are from the valuable annual report of Mr. Champomier upon the crop. Forty-three plantations in the state are worked on the various new processes and vacuum principle. Quality of the crop generally indifferent, the season being bad. Deficiency of rains throughout the state. There are 1,474 sugar plantations in Louisiana, 914 being worked by steam, and 560 by horse-power. The molasses crop unusually large, averaging this year 70 gallons to the 1,000 lbs. sugar. The crevasses on the Mississippi, Lafourcke, and Plaquemines, destroyed 9,000 or 10,000 hogsheds.

The refineries of Louisiana worked up the following:

Louisiana Steam Refinery, 1,467,905 lbs. Louisiana sugar, 52,872 lbs. cistern sugar, 538 boxes Cuba sugar. Battle-ground Refinery, besides the crop of the plantation, (550,000 lbs.) 3,214,767 lbs. sugar, 537,222 lbs. cisterns, 211 boxes Cuba. Lafayette Refinery, 81,765 lbs. sugar, 2,735,114 lbs. cisterns. Valcour Aime's Refinery, besides the crop of 678,000 lbs., 1,859,487 lbs. sugar, 1,004,098 lbs. cisterns, 800,986 lbs. Cuba. The Louisiana Refinery also worked up 2,809 gallons Louisiana molasses, and 249,629 gallons Cuba; the Battle-ground, 94,554 Louisiana, and 179,260 Cuba; the Lafayette, 7,047 gallons Cuba: and the Valcour Aime, 88,555 gallons Cuba molasses.

SUGARS RECEIVED IN THE WEST FROM LOUISIANA.

	1850.	1851.
St. Louis.....hhds. sugar.....	25,580	28,522
"	23,460	38,768
Cincinnati.....hhds. sugar.....	26,760	29,803
"	15,472	22,196
Pittsburgh.....hhds. sugar.....	supposed	6,000
Wheeling, Va.....hhds.	1,500	2,400
Portsmouth, Ohio.....	1,600	2,000
Maysville and Augusta, Ky.....	1,500	2,200
Madison, Ia.....	1,000	1,300
Louisville, Ky.....	14,000	15,000
New-Albany, Ia.....	"	2,000
Evansville and Wabash, Ia.....	3,500	5,000
Cumberland River.....	5,000	5,700
Tennessee River.....	2,000	2,200
Mills's Point.....	1,000	1,100
Memphis.....	6,000	7,000
Steubenville and Wellsville, O.....	800	1,000
Wellsburg and Parkersburg, Va.....	400	500
Marietta and Gallipolis, Ohio.....	500	600
Pt. Pleasant and Guayandott, O.....	400	500
Lawrenceburg, Aurora and Vevay, Ia.....	500	600
Warsaw, Henderson and Owensburg, Ky.....	900	1,000
Jeffersonville.....	400	500
Mount Vernon and Shawneetown, Ia.....	500	700
Many small buildings on the Ohio, at least } 30 in number, say.....	1,500	1,700
On the Mississippi, above Memphis, about } twelve or more small landings, say.....	250	300
Sundry parcels purchased by flatboatmen, } traders, &c., say.....	5,000	6,000
Exclusive of the States of Arkansas, Mis- } sissippi, Louisiana, and part of Texas, } via R. River.....	—	—

SUGAR TRADE OF THE UNITED STATES.

Imports, Exports, Stocks, and Estimated Consumption of Raw, Clayed, &c., for the year ending December 31, 1851, exclusive of California and Oregon.

New-York		Hhds	Tres	Bbls	Boxes	Bags	Cas	Value, Jan 1,	
								1852	1851
Received from	Cuba	94,070	1,548	5,079	188,387	813	—	*4 a 6	*4½ a 6½
"	Porto Rico	29,373	64	2,020	—	—	—	†4½ a 7	†5½ a 8½
"	St. Croix	1,236	—	38	—	—	—	3½ a 5½	5½ a 6½
"	Brazil	—	—	565	—	43,791	303	5½ a 6½	—
"	Manilla	—	—	—	—	108,257	—	4 a 6	—
"	Surinam	617	3	133	—	—	—	4½ a 4½	—
"	Nassau, N. P.	136	23	103	—	—	—	—	—
"	Halifax	—	—	—	—	2,090	—	—	—
"	St. John, N. B.	69	—	17	—	—	—	—	—
"	Other foreign ports	317	10	302	24	—	—	—	—
Total receipts of foreign		126,019	1,648	8,257	188,411	154,954	303	—	—
Received from	Texas	1,576	—	235	102	—	—	—	—
"	Louisiana	15,945	45	326	—	—	—	3½ a 5½	5½ a 6½
"	Other coastwise	3,758	13	35,920	3,384	13,733	—	—	—
Total supply		147,397	1,706	44,738	191,897	168,687	303	—	—
Exp'd 712 hhd's., ship'd to Ca'da	217	929	81	20	3,091	—	—	—	—
Add stock, January 1, 1851		146,369	1,625	44,718	188,806	168,687	303	—	—
		1,601	—	—	8,835	3,798	—	—	—
Total supply		147,970	1,625	44,718	197,641	172,485	303	—	—
Deduct stock, January 1, 1852		7,582	—	—	18,512	26,105	303	—	—
Taken for cons'ption from this port		140,388	1,625	44,718	184,129	146,380	—	—	—

Or, about 132,832 tons—of which, foreign, imported direct, 120,599. Same time last year, 104,071 tons—of which foreign, imported direct, 65,089 tons.

Received at New-York, from foreign and coastwise ports, from 1st January to 31st December.

Stock in New-York, 1st January.

	Hhds	Tierces	Barrels	Boxes	Bags	Hhds	Boxes	Bags
1851	147,298	1,706	44,738	191,897	168,687	1852	7,582	13,512
1850	116,848	1,311	35,019	132,814	61,260	1851	1,601	8,835
1849	128,417	1,404	21,105	63,057	93,938	1850	3,213	1,699
1848	108,703	2,258	19,946	120,354	90,088	1849	4,549	14,127
1847	87,861	779	17,765	144,898	24,255	1848	2,262	2,500
1846	67,238	577	7,242	85,744	37,652	1847	1,279	—
1845	88,268	1,626	17,039	22,958	38,771	1846	1,297	—
1844	62,881	513	11,075	106,918	35,689			
1843	59,003	331	9,896	50,549	38,417			
1842	54,495	75	13,048	58,012	60,553			

Most of the barrels received here from coastwise ports is refined sugar.

Receipts of Foreign, from 1st January, 1851, to 31st December, 1851.

	Hhds & tres	Bbls	Boxes	Bags	Cases
At New-York	127,667	8,257	188,411	154,954	303
Boston	11,571	1,223	82,906	88,126	—
Philadelphia	27,648	5,084	34,971	53,907	—
Baltimore	17,044	2,542	3,597	8,310	—
New-Orleans	350	—	28,619	—	1,683
Other ports	6,168	321	11,071	5,320	—
Total receipts in the United States	190,448	17,427	349,575	310,617	1,986
Add stock at all the ports, January 1, 1851	3,525	—	20,261	7,102	—
Total supply	193,973	17,427	369,836	317,719	1,986
Deduct export from all the ports, in 1851	2,951	2,904	6,542	1,344	—
	194,022	14,523	363,294	316,375	1,986
Deduct stock at all the ports, January 1, 1852	9,367	—	31,446	27,425	303
Total consumption of foreign	181,655	14,523	331,848	288,950	1,683

Or, about tons 201,405
Add crop of 1850-'51, Louisiana, Texas, &c., the bulk of which came to market in 1851, and assuming the stock 1st January each year to be equal 120,331

Would make the total consumption in the United States, from January 1, 1851, to December 31, 1851 321,736
Consumption of foreign in 1850 160,210
Add crop of Louisiana, Texas, Florida, &c., 1849-'50 141,592

Would make the total consumption 301,802

Excess in 1851 19,934

STOCK 1ST JANUARY.

Ports	1852.				1851.			
	Hhds	Boxes	Bags	Cases	Hhds	Boxes	Bags	
At New-York	6,141	13,512	26,105	303	1,213	8,835	3,798	
Boston	774	10,013	—	—	400	7,514	3,054	
Philadelphia	1,852	7,541	1,320	—	1,287	2,900	250	
Baltimore	250	—	—	—	600	—	—	
New-Orleans	—	—	—	—	—	700	—	
Other ports	350	400	—	—	425	312	—	
Total stock	9,367	31,466	27,425	303	3,525	20,261	7,102	

The stock of all kinds at this port, 1st January, 1852, was 8,728 tons, against 2,917 tons last year; and the stock of foreign at all the ports, 1st January, 1852, was 13,659 tons against 6,522 tons, 1st January, 1851.

The above statement we believe to be a correct exhibit of the quantity of raw, clayed, &c., sugar, taken from the ports, for consumption in the country. It will be observed, we do not include the receipts of European refined sugar, being unable to obtain any reliable data for them, and we do not embrace in our exports any foreign or domestic refined sugar, having confined ourselves wholly to the descriptions noticed. The quantity of sugar made here from molasses is large, and the production of the maple tree the last season is rated at 17,500 tons.

For the following interesting statistics relative to the production of sugar in this country from the cane and from the maple tree, taken from the United States Marshal's returns of the seventh census, for the year ending June 1, 1850, we are indebted to Joseph C. G. Kennedy, Esq., Superintendent of Census, Washington, D. C.

	Cane Sugar Hhds	Maple Sugar Lbs
Maine	—	87,541
Missouri	—	171,943
Maryland	—	47,740
Alabama	28	473
New-Hampshire	—	1,292,429
Vermont	—	5,159,641
Massachusetts	—	768,596
Connecticut	—	37,761
New-York	—	10,310,764
New-Jersey	—	5,886
Pennsylvania	—	3,178,373
Virginia	—	1,223,905
North Carolina	½	27,448
South Carolina	150	200
Georgia	1,273	50
Florida	1,741½	—
Mississippi	278½	110
Texas	7,017	—
Arkansas	—	8,825
Tennessee	—	159,888
Ohio	—	4,521,643
Michigan	—	2,423,897
Indiana	—	2,921,638
Illinois	—	246,078
Iowa	—	31,040
Louisiana	262,486	—
Kentucky	—	386,233
Wisconsin	—	661,969
Minnesota Territory	—	2,950
Total	272,974	33,677,041

SUGAR—IMPORTATIONS OF,

INTO THE UNITED STATES SINCE THE ESTABLISHMENT OF THE GOVERNMENT, INCLUSIVE OF THE FISCAL YEAR, ENDING 30TH OF JUNE, 1850.

Years	Quantity, lbs	Years	Quantity, lbs	Value, dollars
1790	22,719,457	1821	59,512,835	3,553,583
1791	21,919,066	1822	88,305,670	5,034,489
1792	22,499,588	1823	60,789,210	3,258,669
1793	37,291,988	1824	94,379,764	5,165,800
1794	33,645,772	1825	71,771,479	4,237,530
1795	37,582,547	1826	84,902,955	5,311,631
1796	25,403,581	1827	76,701,629	4,577,361
1797	49,767,745	1828	56,985,951	3,546,786
1798	33,206,395	1829	63,307,294	3,622,406
1799	57,079,636	1830	86,483,046	4,630,342
1800	30,537,637	1831	109,014,654	4,910,877
1801	47,862,876	1832	66,451,288	2,933,683
1802	39,443,814	1833	97,688,132	4,753,343
1803	51,066,834	1834	115,389,855	5,537,829
1804	55,670,013	1835	126,036,230	6,806,174
1805	68,046,865	1836	191,426,115	12,514,504
1806	73,318,649	1837	136,139,839	7,202,668
1807	65,810,816	1838	153,879,143	7,586,360
1808	84,853,633	1839	195,231,273	9,919,502
1809	12,381,320	1840	120,939,585	5,580,950
1810	29,312,307	1841	184,264,881	8,807,708
1811	55,332,214	1842	173,863,585	6,503,434
1812	60,166,082	1843	71,335,131	2,532,279
1813	31,364,276	1844	166,804,578	7,195,700
1814	20,670,168	1845	115,661,840	4,780,555
1815	54,737,763	1846	128,028,875	5,448,257
1816	35,387,963	1847	2,697,834	275,503
1817	65,591,302	1848	257,129,743	9,479,217
1818	51,284,983	1849	259,326,584	3,049,739
1819	71,665,401	1850	218,425,348	7,555,146
1820	51,537,888			

SUGAR MANUFACTURE, ETC., IN LOUISIANA.—In Louisiana the sugar-cane is passed through the mill but once, and the amount of juice obtained is rarely more than 60 per cent. of the weight of the cane. Therefore the bagasse does not come out perfectly dry, and often contains half as much juice as has already been expressed, especially in horse mills, where the power is moderate and the rollers "set large." The greatest difficulty to overcome in a subsequent operation for the extraction of the remaining juice, is the absorbing power of the spongy texture of the pith, which enables it with exceeding facility to retake the juice expressed; and it has been proposed to charge it with steam at this point in order to supply the place of the more valuable sap; or by a second pressure then imposed, to wash out all the remaining saccharine of the cane. But this method, involving the increased expense of extended evaporation, greatly disproportionate to the result obtained, after repeated experiments performed on both large and small scales, has been abandoned, and attention more directly given to the operation of the first pressing in order to enhance its value and result.

In taking note, therefore, from the experience of others, we observe that those steam-mills of greatest power, moving at the least speed, yield the largest quantity of juice and the driest bagasse. The cane held for a greater length of time between the rollers, allows the larger quantity of juice to fall to a distance beyond the danger of re-absorption, and therefore increases the amount yielded by the single compression. If, therefore, we would increase the amount of work from the mill, it would be improper to double the supply of cane, or the motive power, or even the rapidity of the revolution, but to avoid the too-heavy feeding, extend the length of the rollers, and continue the equal and well-spread supply along the cane-carrier, if possible even reducing the speed. The average length of rollers might be therefore advantageously increased from four to five; or, perhaps, in extraordinary cases, to five and a half feet, and involving but slight difference of construction with such an improvement. With regard to their diameter, we are of opinion it should be diminished with the increased length rather than enlarged on the principle that substances intervening in the contact of large cylinders, offer resistance in proportion to the surface they cover; and in a mill of three rollers, if the third were of reduced diameter, the nipping surface would be proportionably increased in power, and the result of the final compression greater. With such construction and adaptation, a fourth roller, to produce the third action on the cane, might be found superfluous, and the advantage of using the

least possible mechanical force to produce the most juice would be apparent in the reduced quantity of gum and extractive matter from the rind, which must always exude when under great pressure. And still farther, another advantage from expressing the largest quantity of juice would be that the bagasse is the more readily converted to a state fit for fuel, which becomes proportionably desirable as other fuel is scarce.

The value of all combustibles is a subject of increasing importance to every planter, as the supply of wood is diminished by his increased cultivation; and it may be worth a thought, if cutting canes too long and pressing them too closely may not be inexpedient, owing to the increased expense of fuel necessarily incurred to effect the evaporation of such juice thereby produced, surcharged with gum, and boiling with greater difficulty. Without any reliable means, therefore, of estimating the true value of juice—that is to say, its positive quantity of saccharine, it will be impossible to give rules to be depended upon as to quantities of fuel under any methods of application, which shall produce certain results of evaporation, or residue of sugar, to say nothing of the variable quality of plantation wood. We hear it frequently observed that it takes two or two and a half cords per hogshead; but that this is dry wood, drift, or refuse, gleaned from the clearings, is very rarely taken into account. It is, therefore, exceedingly difficult, where coal is not the only fuel used, to obtain any reliable data for calculation of amount of caloric or steam, furnished by any given quantity of boiler, for purposes either of evaporation or steam production. Besides, this is not to be forgotten in the very many different methods of adapting combustion both to trains of kettles and to boilers. On some estates we find a train consuming three cords of bad wood per hogshead of sugar, and another half that amount of good wood is made to produce an equal result. The wet fuel, to support its own combustion, requires a large proportion of the heat it generates to set free the water it contains, and to prepare the repeated supplies to the fire for active combustion. The bad economy of using such wood is at once apparent, beyond the poor fire it produces, even to the extra cost of all the lost labor incurred in bringing such a collection to the sugar-house; labor which would have been of positive value in the field, and brought an increase of crop.

As a branch of the subject, we would notice some of the many ways of setting the "trains" and boilers, of which there seems to be such endless variety, and none universally popular. In the East Indies we have seen a pit eight feet square dug in the ground to the depth of five feet, from this is extended a canal two feet wide and three feet deep, to

any required length, the walls of which are lined with clay and the top arched with brick or stone, incloses a succession of earthen pots, sometimes numbering as many as twenty. The pit is for feeding the fire; the canal is the flue under the train, in length according to the number of evaporators to be used. The process of operation varies from our own only as the pots are small and movable, and may be conveyed from place to place along the line of fire as is necessary to the perfection of their contents. In a long train, fuel is often supplied at some of these intervening openings when the pots are removed. At the exit opening of the flue, there being no chimney, a valve is arranged acting as a damper, by which the amount of fire-draught is controlled, and retaining the hot air in the chamber of the flue when required. The second fire, when of charred wood, tends to the combustion of the smoke, and the same arrangement has been applied in this country for the same purpose under steam-generating boilers, when of unusual length, but with very unsatisfactory results.

The "bascule pans" invented by M. Guillon, and considerably used in the French colonies, have the same advantages as the train of pots; their contents are small, (shallow,) speedily evaporated, and readily removed from the fire. The inconvenience of bailing is avoided, a decided advantage to the quality of sugar they produce, at the same time a considerable amount of work may be accomplished by a small number of hands. They are constructed with an ear on each side, into which a chain connects with a crane, the latter so placed as to serve two pans, and readily convey them between the coolers and the fire.

The common train of four or five kettles, made in Louisiana of cast or wrought iron, is usually permanently set in masonry, having the fire applied under the smallest or finishing kettle, and a straight canal of about a foot deep under all, extending to the chimney. Various improvements on this simple construction have been made from time to time, such as hanging the kettles entirely by enlarged flanges, leaving the whole under surface exposed to the fire; building reflecting walls under each kettle, to force the fire to sweep entirely round; curving the bottom of the canal to correspond with the curves above, and produce reverberating surfaces towards the kettles; and, in fine, leaving a very large space under the whole train, the opening of draught in which is taken from the lower side, at the chimney, and is supposed to take off only the lowest stratum of air, which, of course, possesses least heat. All these methods are analogous to the various ways in which the boilers for steam-engines have been constructed and set, and deserve especial study where economy of fuel and amount

of evaporation to be performed are such important points as in sugar-making. Opinions are so various in regard to what may be indeed the best method, and practice so diverse, that any interested party in quest of information on the subject, to serve his especial purpose, will do well to spend some time in examining neighboring "improvements," and he will observe that the plan adapted to one locality will not always succeed in others, and for which satisfactory reasons cannot always be given.

The additional supply of fresh air at the point of culmination of the flame under a boiler, has answered a good purpose, when the mouth of the draught has been large and tending downward, and where the fan has been applied to the fire, all other supply of air at the same opening being cut off. A damper on the chimney is indispensable. Baker's method of lining the flue under the boiler with cast-iron plates of such curves as to produce reflection of the fire current toward the boiler, has been highly approved by some who have tried it. The "Argand furnace" of Williams, and the patent draught of Griffin, as they have been combined in some late constructions, possess decided merit, and is probably the best way of setting a stationary boiler without flues. The grate bars are placed very low, say three feet; the bridge-wall approaches within six inches of the boiler, and at the distance of four feet is another bridge-wall made of iron plate or pipe, perforated with many small holes, through which the fresh air is admitted to the fire, as may be necessary. From this plate or pipe the flue is continued to the end of the boiler, and of a depth not less than four feet, forming a large reservoir of hot air, smoke, &c. If a cylinder boiler, the end wall is now carried up in the shape of an arch, and the opening made at its base communicating with the chimney; but for a boiler with flues the opening is made at the point next it, and of very reduced dimensions, often not exceeding an inch in depth, and length one-third of its circumference.

Upon the perfect arrangement of this end-wall and adaptation of the draught there, entirely depends the use of intermediate air supply to any furnace, and it seems not too much to expect that this mode of setting might be well applied to a train of kettles constructed of iron as in use among us, when we have observed that similar principles are successful abroad as used with the pots.

Connected with the subject of fuel two important points must not be lost sight of, when comparing the relative advantages of locality before referred to, the position of cylinder-boilers, or construction of flue boilers for plantation use, and these are: fire-surface to generate steam, and the size of the reservoir for steam above the water. In the evapora-

tion of juice we find that surface of fluid for the escape of steam, and atmospheric pressure, possess definite influence upon the progress of the work; and by an analogy confirmed also by experience, we observe that boilers kept *too* full of water, do not supply the same quantity of steam. The method of setting cylindrical boilers in pairs, making the fire under the first, and returning it to toe chimney under the other, is but a modification of the arrangement of flues, the safety of which, so far as maintaining a water level in both, will chiefly depend on having the steam and water communications sufficiently large. In conclusion, we do not think that planters living upon direct water communication with the upper country, place a sufficient value upon the coal which may be landed at their door cheaper than very many can afford to take hands from the field to provide wood; and, moreover, the much greater quantity of heat that can be obtained with the same labor at the furnace. The isolated instances where bagasse has as yet become the regular fuel, only three or four plantations in our vicinity, are no guides from which to form calculations as to how much dependence may be placed upon it, as sufficient fuel to take off the succeeding crop. Risk of fire and damage by water are too great. Our climate is not like that of the West Indies, sufficiently dry to cure the bagasse with little or no labor, even if the cane itself were equally capable, by the same freedom from gum, to be converted into a good combustible.

We have before spoken of the quantity of juice yielded by the canes under the mill, and of its value in saccharine according to the compression the cane undergoes. The value of crystallizable sugar it contains is too generally reckoned by the instrument of Beaumé, miscalled a saccharometer, in the very application of which the principle that has governed its construction, specific gravity, is quite lost sight of. The incompatibility of such application as a test for saccharine, any one will call to mind when using the instrument in brine or in molasses, where it will ever stand higher than in a saturated solution of pure sugar. Canes cut high, or more closely expressed, yield a greater proportion of gum and mucilage, which giving additional consistence to the juice, tends to support at greater elevation any substance floating thereon. There can be no proof of saccharine equal to that of working by evaporation, and in this test, with any apparatus in use at present, it will be seen that the same difficulties before named as impediments in the use of the saccharometer, obtain, when we would produce evaporation, the escape of steam being impeded by a viscous fluid. We would therefore observe incidentally, that such may often be the cause of the

failure of some experiments in this country, which have been quoted by writers as eminently successful elsewhere. The soil of Louisiana seems to furnish a larger quantity of gum to the cane than any other, where it is cultivated, and the increased difficulty with which clarification is here performed, compared with other places, proves a difference of constitution which involves another mode of treatment.

We find cane-juice running from the mill charged with many impurities, and a variety of contrivances applied for the purpose of straining it into the reservoirs. Basketing, grass, or wire-cloth cannot be made fine enough to arrest the minute particles of soil washed from the stalk, and if they were detained by such a body as sponge, the surface would soon be covered, the passage of the juice impeded, and the necessity of frequent change of strainer increased; besides that, such substances holding the saccharine, promote fermentation. In the common operation of sugar-making, these particles of earth are not allowed sufficient time to precipitate themselves, and are consequently carried into the "grand" and onward, finally forming a part of the sugar itself, even the nuclei upon which the crystals make. Ebullition in the grand brings a portion of these impurities to the surface to mix with the froth and small particles of vegetable fibre, held together by the partially coagulated albumen of the juice, and they are then thrown off in such portions by skimming. But such clarification must necessarily be very imperfect. It has been frequently stated, and reputable authorities quoted to prove, that cane-juice can be entirely resolved into sugar, less its constituent water, but simple observation will prove that sugar cannot be produced by any apparatus without producing molasses at the same time. That cane sugar is *not* "a primary secretion" of the plant, though the fact be supported by so eminent a chemist as M. Hervey, sustained by the opinion of Professor McCulloch, appears to be proved by the fact that such formation of saccharine is not found in any other instance, if here, in the whole vegetable kingdom, excluding the secretions of roots, and we trust that the farther researches of savans will expose such fallacies.* The quantity of molasses formed in the process of sugar-making, depends necessarily upon the quality of the cane known to be influenced by soil and season, perhaps quite as much as by the various methods of evaporation. There are certain components of the juice as natural to it as sugar, and which cannot be separated from the latter, without involving such portion as may exist

* Professor Liebig has advanced, in a late work, that the nodes or joints of the cane operate to correct the upward current of the sap.

in intimate combination with it. In this operation, then, as clarification progresses throughout, not by the surface only, certain portions will be precipitated, such as the unneutralized acids and free earths, together with the albuminous part taken off by skimming, and unites with the uncrystallizable sugar made uncrystallizable by oxygenation or carbonization; in other words, too much boiling and immoderate firing. Molasses consists, then, of feculences, gummy, uncrystallizable sugar, and the sugar washed down from the mass set to drain, and will be more or less valuable according to circumstances. But that its formation is indispensable to the process of sugar-making, is beyond an argument. Regarding now the causes of its formation, that they may be obviated in a measure, we observe that the theory of crystallization refers to temperature as the governing principle together with atmospheric pressure, by which the amount of product is influenced. And it is a point still to be proved, whether a high or low temperature in boiling will produce a less wasting result, more perfect crystals, and less drainings. In a digester or steam-tight boiler, a solution of pure sugar has been evaporated at a temperature maintained of 269° , and the result of the re-crystallization was larger than of the converse experiment of boiling in vacuum.* We know by the result of every melting, (of even the purest sugar,) and its re-crystallization, that the product is successively less in quantity, and the formation of mother-water or uncrystallizable sugar in solution, is successively greater. This can be attributed only to the effect of heat, and we may conclude that it is the inevitable result of its application.

All sugars, all saccharine products, contain a greater or less amount of mother-water or molasses; the juices of the beet, the maple, the grape, honey, amidon made from starch, glycine, the product of oils boiled with the oxide of lead and water. It is enough that observation proves it to exist in every solution of sugar, and the results of experience are of more value than fanciful theories to convince that there can be made a sugar from the cane-juice without producing a certain and considerable quantity of molasses. Every particular of treatment to which cane-juice may be subjected in the process of being manufactured, will produce a definite result upon this residuum, and the power it may possess of re-crystallization upon repeated boiling, is to be influenced chiefly by the materials used in clarification.

Juice left to itself exposed to the open air, enters sooner or later, according to temperature, into a state of fermentation which progresses through a regular series of changes,

all of which have birth in the original quantities of saccharine and gum contained. The first or viscous state, is indicated by a ropy appearance, and takes place at a temperature between 86° and 105° , and differs from the viscous change by the evolution of combustible gases with carbonic acid, and the more distinct separation of the gummy matter. After effervescence has ceased the juice is found to contain lactic acid and mannite, which together possess nearly the elements of grape sugar, and are to be regarded as strong impediments to crystallization. The production of this lactic acid is facilitated by certain exposure to air, as in the apparatus called a condenser, used by Derosne, where the juice is subjected to partial evaporation, by falling in drops over a succession of copper pipes heated by steam and placed in the open air. But sour juice, such as has once passed this primary change, is not affected by such action only, as it becomes more oxygenated. The acetic acid it possesses is shown by the bright appearance it gives the copper. Succeeding this viscous fermentation comes the vinous, converting all remaining saccharine into alcohol, and for which in the West Indies all sweet waters, waste sugar skimmings and scrapings, are preserved to be converted into rum, and separated by distillation. It is said that twenty minutes after juice leaves the mill is, in some cases, ample time to produce fermentation to a perceptible degree, and it is therefore apparent that no time should be lost in the process of sugar-making at this stage. However, it is a common practice to have large juice receivers for the purpose of collecting the sediment before the operation of clarifying commences, forgetting that these two processes might be made to progress to better advantage, and with economy of time, by combining them.

In the use of lime as a clarifier it is no mistake that it acts only to neutralize the acids of the juice, so far as has been yet developed, but beyond this it goes into mechanical suspension, excepting only the very small portion taken up by the water, viz., one part to 778 of water at temp. 60° , or 1 to 1270 at temp. of 212° .* And this excess applied, as well as the quantity, in solution intervening between these two given temperatures, is found to precipitate itself on the bottom of all reservoirs and in the kettles, to become, by the aid of fire, a concrete, impeding the transmission of heat, and involving a cessation of the process in order to remove it. And in this removal by burning, the risk of cracking a kettle, and thereby extending the delay of making the crop, by which large losses may be incurred, is very much dependent on the result of the process of clari-

* Pelligot.

* Dalton.

fication. Sugar is a solvent of lime, (*Ure*), and the combination is uncrystallizable, which therefore tends to form molasses, as does also the administration of earths, metallic salts, &c. It is well known, from the experience of some among us, that the use of lime is not essential to the process of sugar-making, for a very beautiful product is obtained without it, indeed of a superior quality, as lime always tends, in however small the quantity given, to produce a red color on the crystals, and there remains not a doubt that it is generally used in excess.

The application of chalk to cane-juice to neutralize the free acids it contains, at the same time introduces calcareous and uncrystallizable salts, which also fix a portion of sugar in a liquid state from which it is impossible to free it. And again, the precipitation of the excess of chalk or salts forms a crust on the bottom of the kettles or on steam-pipes, if used, which is no easy matter to remove, to say nothing of the time lost at such occupation. As a chemical agent for this purpose, both in kettles and pipes, where a day or two may be allowed, vinegar will be found active, and readily obtainable from sour molasses or refuse sugar set aside for fermentation, dissolving this crust that it may be either scraped or washed out.

In the use of alum as a clarifier, a state of rest is essential, and its operation on cane-juice is the same as on muddy water; the hydrate of alumina is formed—a gelatinous, semi-transparent substance of greater specific gravity than water, and therefore immediately falls, taking with it the earthy particles held in suspension.* This action, therefore, is entirely the result of gravity, for alum has but the slightest attraction for acids, and does not fully neutralize them.—(*Brander*.) Animal albumen, whether that contained in blood, white of eggs, or milk, is always alike, and operate in a mechanical manner. Being spread in a cold state throughout the juice or solution of sugar, when heat is applied it coagulates and comes from all parts to the surface, like a net rising from the bottom, and thus collects and presents at top a crust of cooked albumen combined with all the impurities before free in the fluid.

Other substances, more distinctly known as metallic salts, are also powerful purifiers, as they possess peculiar chemical affinities. With vegetable albumen, the red sulphate of iron, the chloride of zinc, and acetate of lead, readily combine and precipitate. Many other substances have been used to produce the same result by the experimentalist, but the practical man would soon be disappointed with the economy of such agents, as they

almost universally ruin the molasses, both for the re-boiling and the market.*

After the application of any of these materials a state of rest is indispensable, which is by no means sufficiently appreciated in the present method of sugar-making generally. This one point, in conjunction with the proper degree of temperature at which juice should be kept prior to evaporation, as before spoken of, will have a degree of influence upon the quality of the sugar and the facility with which all the subsequent evaporation can be carried on, especially as regards a vacuum-pan, far beyond the present estimate of such persons who may not have observed it. That the juice-boxes should be clarifiers, and not of small dimensions, will therefore appear plainly advantageous, and that the sum of their contents should be enough to allow each clarifier one or two hours' rest before the juice need to be drawn off for evaporation. As to the time required for precipitation, it must be dependent somewhat upon the quality of the juice, but there are certain advantages in not extending it beyond half an hour. Cane-juice once brought to within a degree of boiling and then left to rest, has not the same liability to fermentation, and will remain free from an increase of acid for an indefinite time. The affinity for oxygen is also diminished, and the surface, protected by the scum which at once forms upon it, thereby prevents the formation of red coloring matter, so familiar to all, on the cut surface of an apple exposed to atmospheric action, and which is precisely analogous to the same chemical affinities existing in cane-juice. By elevation of temperature above 150° (*Liebig*) all fermentation is prevented, and a clarifier of four hundred gallons, once heated to boiling, will maintain its warmth sufficiently long for common purposes. Moreover, after the addition of the clarifying materials the capacity for change is much diminished.

In ordinary kettles, when a portion of the liquid is converted into steam in contact with the bottom, it does not separate from the bottom immediately, but remains until a steam-bubble of considerable size be formed, and in the mean time a part of the bottom defended by it from the contact of the liquid, becomes overheated, producing as consequences, 1st. the rapid destruction of the metal, and on that account an expense. 2d. Necessity for having originally much thicker and more costly plates of metal, which thickness is an additional impediment to the passage of heat, and therefore a pro-

* The recipe for Howard's finings is

2½ lbs. alum, } added to cream of lime for each
24 lbs. water, } 100 lbs. sugar.
3 ozs. whiting, }

* Chaptal.

Silliman's Report to Congress, 1833.

portionate waste of fuel; and lastly, when applied to vegetable extract, produces a carbonization and blackening of the overheated portions.

The primitive methods of sugar-making, all by pots or kettles over the naked fires, are found productive of uncrystallized sugar and caramel. The transmission of heat from fire to a liquid through an intervening solid, whether of metal or of earth, cannot be performed in an equable and controllable manner, and this first led to the introduction of liquid media for heat, which after a few experiments were soon abandoned. Caramel, better known as burnt sugar, is formed on the sides of kettles at a temperature near 356° , (*Pellagot*), and as it is well known that a common fire maintains a temperature of nearly 1000° , it will at once appear that to keep the surface of kettles below the point before named, can be no easy duty, and caramel will inevitably be formed to a greater or less extent. The application of the sand-bath in some of the operations of the chemist, led to the oil and mercurial baths for the evaporation of syrups. These denser liquids boil at temperatures far higher than water, and would, by a natural law common to fluids in a free state, maintain an equal temperature throughout their volume, to an extent much above the one required for the evaporation of the rarer fluid; however, some facts, peculiarities in regard to their respective capacities for heat, were lost sight of, but which came to be developed by experience, and caused the abandonment of the project.

Steam was next resorted to, and we see its first application in the train of MM. Fawret and Clark. Three double bottom kettles were placed immediately over a steam-generating boiler, and the flue, continued from this boiler, passed under two large grands, in which clarification was performed, and the juice taken from them to the three first, in rotation, as in the common train. The steam, consequently, was admitted to the space between the bottoms of the kettles and supplied the place of fire to them. But these steam surfaces were of limited extent, and the work they performed depended on the tension of the vapor, which for many reasons was kept at a reduced temperature, compared with what in present use is found expedient. We next observe the introduction of a long copper pipe coiled into the kettle, through which steam was made to pass and transmit its heat to the syrup. This application was modified by Davis, of London, by placing the same coil of pipe in a cylindrical copper vessel, whose bottom being flat equally facilitated the discharge and the cleansing; and it was finally perfected, as we see it at the present day, by being taken from the train

and fire, to be made an independent part of the apparatus. The project of setting the kettles in the top of a long boiler, to expose their under surfaces in the steam chamber below, has been proposed and experimented upon by a citizen of Louisiana, but in like manner as above, the steam surface proved to be too small, and the progress of evaporation slow. Miller's method is an improvement on this; for the kettles over the boiler he substituted large pans with short copper pipes, set at such inclination as to return the steam condensed, by its own gravity, to the boiler below, to be again changed into vapor. It is the loss of this vapor, containing a large amount of heat, which had made the use of steam-pans unpopular, as they proved then to be but small economy of fuel, if of time, in sugar-making. Taking in view this fact and another, the probable condensation of steam at a very short distance from its entrance into the pipe covered with a cold liquid, has led to many changes in the construction of steam-pans, some of which have decided merit. The well-known fact that water does not communicate the heat it holds with so great facility as steam, the proportion being one to five and a half, has made it an object to get rid of the water as fast as it forms, and supply its place with steam; therefore the largest amount of steam surface and the most free exit for hot water becomes at once the best recommendation for an evaporator. It has been advanced that steam condenses at a distance not exceeding ten feet in a pipe immersed even in a boiling liquid, and this has led to the introduction of short pipes, but the proposition wants proof.

Several inventions have been applied to detain the vapor where wanted in the evaporators, and release it only when condensed, and the one most common is constructed with a hollow globe of copper, made to float on the surface of water in a closed iron box to which the steam-pipe opens. As the water increases in quantity, it lifts the floating globe, which, connected by a lever to a valve at the bottom of the box, opens for the escape of the water. But even with the greatest care in the construction, the copper is found to have holes, if no larger than pores, which from time to time admit the steam to condense within and convert the "float" to a "sinker." We have seen lately another contrivance which, from having answered the desired purpose, deserves description, for with all steam apparatus it must be an essential point of construction to economize the vapor and then make use of the boiling water. The steam-pipe is made to terminate on one side the top of a cast-iron cylinder of about one foot diameter, and three feet long, placed under the pan. Within is a copper bucket loaded at bottom to make it float erect in the con-

densed water, and leading through the top of the iron cylinder is a continuation of the waste-water pipe, which descends to within two inches of the bottom of the bucket. By the steam condensed running into the cylinder on the outside of the bucket, it is floated up until its bottom, touching the end of the waste-water pipe, closes the opening, but the quantity of water increasing, overflows the bucket, which, sinking proportionately, opens the pipe as needed, and allows the water to escape to the reservoir. An apparatus so simple and so little liable to derangement, besides that it requires no care, should be better known and more used. Another advantage in the improved pans is, the pipes are so connected that by turning off one coupling, the whole may be raised as a door on a hinge, to facilitate the cleaning.

In the use of steam, there are some phenomena worthy of especial notice. It was observed by Dalton, that to condense one pound of steam, five and a half pounds of water were required, and this water was raised by the steam, from a temperature of 60° up to 212°. It was also noticed that the time required to evaporate a given quantity of water by a certain continued supply of heat, was five and a half times as long as it took to raise the water from 60° to 212°. That the latent heat of steam increases with its rarity at low temperatures, and diminishes with its increasing density at high temperatures. From which facts we derive the points, that the economy in the use of steam for purposes of evaporation, lies in maintaining a current of vapor of low temperature, without permitting the part condensed to be lost. For, as it takes but one part of fuel to generate vapor from boiling water, it takes five and a half parts to raise the water to boiling. High steam does not contain proportionate increase of sensible heat. As resistance to formation of steam exists in fluids more strongly from the pressure of the atmosphere than from the attraction of their atoms, on the removal of this pressure entirely, the fluid will boil, in vacuo, at about 140° less than in the open air. This fact exhibits the economy of the vacuum-pan so far in the process as to the commencement of ebullition, but beyond that point, the steam produced being more expanded and rare, has a greater latent heat; wherefore, unless the vapor taken off can be used as a fund of heat, there is no economy of fuel in the use of a vacuum, more than in the open pan.—*Arnott.*

It was only when Watt had discovered, by the experiments of Dr. Black, how much heat was lost when steam was lost, that he contrived the separate condenser for his steam-engine, by which was at once saved three-fourths of the fuel formerly used.—(*Renwick.*) This has been partially applied in the "heaters" of the high-pressure engines now so common throughout the country, and is an

apt illustration of the economy of using the waste steam from the plantation engine for clarification; that the juice, being then near the evaporating point, requires but a small accession of heat to bring it to the boiling point. Further, the escape steam, if not so used, would be an entire loss. One or two pounds of detention in the outlet from the clarifiers, will equalize its pressure throughout, and secure an equable application of heat, while it will not materially impede the engine by back pressure. The great advantage that steam possesses as a medium of heat, is, that it is so readily applied and governed, and that it very rarely attains the power of carbonization, so much the objection to the naked fire. The economy of its production is doubtful, but of maintaining it as a continuous rotary source of heat, there remains not the least doubt, which the foregoing facts will not entirely remove. The facility with which it parts with its caloric, and the readiness with which the caloric can be applied, are illustrated by the fact, that it requires ten square feet of boiler fire-surface to supply four square feet of steam-pipe surface in an open pan. The estimate of some experienced engineers is even a greater disproportion, such as ten to three, and it is always desirable to have an abundant supply, as the rapidity with which the evaporation can be performed is the great desideratum in the use of such apparatus.

The very many methods invented to supersede the inconveniences resulting from cooking sugar over the naked fire, exposing it to be burnt, and increasing the quantity of molasses formed, to say nothing of the risk of fire to the buildings in which the operations are carried on, are curious, if not instructive, in the history of inventions, and a brief review of them may be interesting before we look into the apparatus in use at the present day; for it has been by successive steps that all improvements have been made, and from the position the manufacturer now occupies, his retrospective view will disclose to him the obstacles which others have encountered, and their expediences to overcome these will cease to be undervalued by him, as well as in his own manufacturing, to teach the true operations of physical laws.

From the application of the oil bath before spoken of, we see the oil applied through a spiral tube, as a medium of heat to syrups, but this also was entirely abandoned for the use of steam. The capacity of oil for heat was proved to be far greater than that of the syrup, and the contrivance wasteful of fuel. M. Milles Berry was the first to introduce the use of short steam-pipes, and his invention is well known as the French steam-pan. Increase of steam surface in double bottom kettles, the upper one being deeply corrugated, had not proved so effective in result as was anticipated, and this parallel structure of

pipes similar to a gridiron was introduced as bearing some resemblance, and having double the amount of steam surface. But here, more than in almost any other structure of pipes, the expansion and contraction of the metal being hot or cold, rendered the possibility of keeping the innumerable joints tight, almost out of the question. In this pan, the condensed water escapes by interior tubes, which doubly increased the difficulty. Knight, of Liverpool, introduced the plan of admitting hot air through a coil of pipe pierced with numerous small holes, into the boiling syrup, to carry off the vapor, while Vidder modified this invention by passing the hot air over the surface only, for the same purpose; and at a later day, to facilitate the formation of vapor in syrup, Milles Berry introduced several drums moving within each other, in the pan. But all of these contrivances had the same evil, that of churning the syrups and facilitating their oxygenation, producing color and uncrystallizable sugar. When the superior advantages of the vacuum-pan first became known, not only for the purpose of sugar-making or refining, but equally for the superior quality of the extracts made by it, numerous were the plans resorted to for producing this required vacuum with the greatest economy and facility. The increase in volume of a liquid converted into vapor, being nearly seventeen hundred times, the large air-pumps and rapid strokes required before condensation of the vapor was thought of, led to extended machinery and increased cost of labor.

The invention of the condensing cistern is therefore equally valuable as that of the vacuum-pan of Howard. He, too, like Watt, was indebted for the hints derived from the experiments of co-laborers, for his fame and success. Before this was applied as it now exists, we find that vapor was taken off through long coils of pipe placed in running cold water, just as stills are now constructed, and the pump producing the vacuum worked both vapor and water. This application of condensation was the source of another that in sugar-making is even now considered an improvement, from its economy of heat. MM. Chaponais, d'Abonille, and Cellier Blumenthal, each substituted cane-juice for water, in their condensers; their apparatus, more recently improved by Dumont, Degrand, and lastly by Derosue, has given us the great condenser of the Derosne and Cail apparatus, which is a succession of parallel pipes of large diameter, placed one above the other, to the number of twenty or thirty, over which the juice is made to fall in drops from one pipe to another, and is thereby considerably evaporated, and proportionably increased in value. But these vacuums all involved the use of an air-pump, which requires a large amount of motive power, and we find this led to the invention of Roth, a reservoir for steam (at a little distance from the vacuum pan),

into which was poured, through an extensive strainer, a large amount of cold water, which had for effect, after the expulsion of the air, and supply of its place by vapor, to condense this vapor as rapidly as formed, and thereby maintain a partial vacuum. Davis applied revolving floats, like those of a rotary churn, for the more rapid production of steam in the pan; and another appliance was a drawing-pan to take off the vapor. But the perfection of the condensing cistern, as it stands in connection with the air-pump of the present day, has superseded all other contrivances. Now, there is required to be nearly water enough to condense all the vapor, and thereby lessen the amount of work for the pump, at the same time facilitate it, and perfect its operations. Too often, however, it is complained of as an intricate piece of machinery, and liable to disorder; whereas, if properly made and attentively worked, there is as little liability to disappointment as from any other pump. The use of water in large quantities being therefore indispensably connected with a vacuum-pan, limits its application to such localities as offer sufficient supply. To overcome this difficulty, and to make entirely available the whole amount of vapor discharged from a vacuum-pan, and thereby secure even an extraordinary economy of fuel, has been left for the invention of M. Rillieux, and he has perfected the combination of the apparatus in a manner not only of admirable adaptation, but good taste in structure, and such as will commend itself to any intelligent person who will devote some little time to become familiar with its operation. The method of operation is as follows:

The juice being clarified by the escape steam from the engine, is once filtered through animal coal, and then passed into the first vacuum-pan, which is also supplied by escape steam, as far as it will suffice, and if more is wanted, a direct communication is opened with the boilers; here the juice is evaporated ten or twelve degrees more, and then being at about 23° to 28° of the saccharometer, is again filtered through the coal, from which it comes, ready to be finished by boiling in the second and third vacuum-pans, which are supplied with steam from the first by acting as condensers to it, the syrup in them being made to boil in a higher vacuum, and of course at a lower temperature. As the vapor of the first pan is drawn into the tubes of the second, so the vapor made in the second pan is drawn through the pipes of the third, and at last condensed only when there is no farther use for it. As an economical process of evaporation, this method must supersede all others on large estates; and the eminent advantages it possesses in connection with the process of sugar-making, need no recommendation to the practical man. Without the use of the coal-filters, the juice is entirely excluded from the air, and, not being

exposed at any time to a heat above 210° , cannot produce either caramel or uncrystallizable sugar, therefore the quantity of molasses must necessarily be much less, and the color of the sugar also brighter. The use of animal coal is by no means an essential part of the apparatus of M. Rillieux, but it is so conveniently connected, and at so small a cost makes great improvement in the quality of the sugar, that it is universally adopted.

It has not been proved that this entire evaporation of cane-juice in vacuum is detrimental to the quality of the product, but it is the common observation that sugar made in this way has no other flavor than "rock candy." When the loaves from the draining moulds are shaved down, they are as readily formed into stamped loaves by the usual process as in a refinery, and then if properly dried in the oven, are as durable in form. The vacuum-pan used as a finisher or battery-kettle, makes a grain adapted to the pneumatic-pan or the forms, when it is desired to liquor the product in order to improve its quality, and for this reason as well as the much less quantity of molasses sugars produce when finished by it, recommends itself. For the production of a common brown quality it affords a superior grain, and among those who have ever used the vacuum-pan we have not heard of one person willing to set it aside. M. Pelligot asserts that the formation of a large grain depends entirely on the vacuum during the concluding part of the process only, which we fully believe to be the case, and therefore where time is a greater object to the planter than fuel, as it may be where his crop is large and the season short or late, to take it in, we should advise the use of open pans as evaporators up to the last point, and then finish in a vacuum-pan. The steam passing through the pipes of the open pans may be brought to the pipes of the vacuum-pan, and the condensed water will partially serve the jacket. The advantages of the open pans are the extreme rapidity with which they effect the evaporation, and consequently the larger amount of work accomplished in a given time; the shortest time the juice remains exposed to the influence of heat always injurious; and under present adaptations an economy of fuel superseded by none but the apparatus before named. The medium of heat is conveniently under the control of the operator; it may be shut off and abandoned at any moment, and every boiling, if the pan is used as a finishing kettle, brought up equally to the same point, while the steam may at the same time be held back in reserve for subsequent use.

The use of escape steam for clarification is an important economy of heat, and has not been so much introduced as might have been expected of so simple an innovation. Besides the advantage of regulating the temperature applied, which it affords, another equally

great is the state of entire rest which can be afterwards allowed, and that the operation of skimming can be dispensed with. The clarifiers in the apparatus both of M. Rillieux and of Derosne and Cail, are double, hemispherical kettles, having a cylindrical ring of sheet iron on top to increase their capacity. The steam is admitted to the space between the kettles, and what is there condensed is collected in the common hot-water reservoir from which the boiler is supplied. The connection of the bone-black filters is similar in both apparatus. From them the juice is also taken to the first vacuum-pan, but in the Derosne and Cail arrangement, the vapor from this pan is condensed by the application of fresh juice, as before described, then again filtered through the bone-black and finished in the second vacuum-pan.

The phenomena connected with boiling in vacuo are too well known to demand description here. The operation of all pans, however, differently constructed, is conducted in the same manner to produce same results. The pressure of the atmosphere is in all indicated by the barometer, and the temperature also of the fluid by the thermometer. These two instruments are indispensable to the pan, and operate with beautiful regularity, from the known laws that in proportion as atmospheric pressure is decreased, the syrup boils at a reduced degree of temperature, and therefore both instruments serve equally well to indicate the state of vacuum. The knowledge of the point at which to make the strike must be acquired by experience, and with a little attention, care and practice, may be learned in the course of the day, to adapt the work for the subsequent operations intended, whether the sugar is to be grained in coolers, moulds, or pneumatic-pans. Heretofore it has been considered essential to have a "heater" attached to a vacuum-pan, for as the syrup was discharged at a reduced temperature, near 120° , it was customary to heat to near 170° , before placing it in the forms. But this "heater," which was a double-bottom kettle similar to the clarifiers, is now dispensed with, except for certain other purposes.

The operation of animal coal formed from bones by confined calcination, has been too often considered to be purely mechanical when used for filtration, as in large cisterns in refineries, and perhaps grows out of the fact, that when first introduced, the filters were filled with the ivory-black mixed with sand, and it is always a long time when false theories regarding new agents are advanced, before the more correct take full possession of the public mind. The action of coal on juice and syrups, except so far as straining them on the top of the filter goes, is purely chemical, and depends for its vivacity upon the purity of the surfaces, and for amount of action on the extension of surface, temperature, etc. Therefore the method adopted for, and per-

section of the calcination, will determine the quality of the coal. Formerly it was thrown away when once used, but fermentation and re-burning revive its decoloring properties, and now it is suffered to rest for a time, and afterwards re-burned in a rotary retort of very simple construction, involving but small cost to erect or to use. Thus, then, the great secret of the age in regard to sugar-refining, from which large fortunes have heretofore been made, laid chiefly in the use of this simple material, and has come gradually to the knowledge of all who have sought the secret.

The use of coolers or forms, for the granulation of sugar, or even of pneumatic-pans, have a relative value only as the molasses can be taken from the sugar by one or the other with greater or less facility. From the first, it has to be put in hogsheads to drain; in the second, the molasses drains into an earthen pot or trough leading to a reservoir below; and in the last, when the grain is perfectly formed, the air is withdrawn from under it, and the molasses runs down to fill the vacuum. But this contrivance has only lately been brought to successful operation, owing to certain physical obstructions dependent on temperature, moisture, etc.

"Claying of sugars" is performed by placing a small quantity of this clay dough, made with water, on the sugar forms. The clay gradually lets fall its water, which percolating downward dilutes a portion of uncrystallizable residuum, that chiefly holds the coloring matter on the surface of the crystals, and carries both with it to the reservoir below.

The process of "liquoring sugars" is equally simple; a saturated solution of white sugar being substituted for the clay-paste. This operates to reduce the crystals in a small degree, and assist the escape of the molasses. Molasses itself, when of good quality, can be used for the same purpose on goods of lower quality. When alcohol was first discovered to be the solvent for caramel, which is the principal coloring body, it was applied as a liquor, and successfully, if free from water, but the difficulty of so obtaining it, and its disadvantageous effect upon the molasses, together with the peculiar risks in using it, have caused it to be neglected, and now liquoring by syrups is the most common.

Temperature and a state of rest are the great agents in the process of crystallization, and control in a measure the result of previous operation. Sugar-candy, an article of more extensive manufacture in the old countries of the east than with us, is dependent for its formation upon the fact that the syrup is left at a steady temperature of 140°, maintained by a stove for the space of three days. It is the only refined sugar of India, and is used after being pulverized as we use the loaf. In the Island of Luconia, of which Manilla is the chief commercial port, all low qualities

of sugars, such as are taken from the cisterns, are drained first in baskets, and afterwards in nets placed in the sun, until the loaves become so hard and compact that they are transported "in bulk," without package, and this is what is called jaggery, valued there at not more than two cents per pound, being in color nearly black with minute crystals. The art of refining is not known in the east, and the only improved sugars we find are all clayed. Molasses is of but little value, and not manufactured.

We have now passed in brief review over the whole process of sugar-making as now carried on with and without innovations upon the old system. These changes, perhaps too often called "improvements," claim a glance at least from all who are interested to keep pace with the advance which art is making in the branches of industry to which our respective fortunes in life have cast us. And in this respect we ought not to be dull of observation, seeing only but by study, and by subsequent reflection comprehending. The "mysteries" of the steam engine and the vacuum-pan, thrown over but simple physical action, by the limited conception of ordinary minds who give them no *thought*, are dispelled by contemplation. But for this pride of our ignorance we should despise the feeling that there is anything either in the simple or refined operations of nature too large for our comprehension, or too minute to be worthy our devoted attention. If we like not what we see others do, we have learned thereby to disapprove, and will afterwards be taught to avoid their errors, though our own powers of originality and invention may not be sufficient to suggest new methods of operation. The converse of this is also true, if their success is assured we may follow their example. Though the Spaniards once could not make the egg stand on its end, there have been none so ignorant since the days of Columbus.

SUGAR CULTURE IN THE EAST INDIES.—There are three kinds cultivated in India: 1. The purple; 2. The white; and 3. A variety of the white, requiring a large supply of water. The epitome of the reports affords this information.

1. The *purple-colored cane* yields a sweeter, richer juice, than the yellow or light-colored, but in less quantity, and is harder to press. Grows on dry lands. Scarce any other sort in Beerbhoom, much in Radnagore, some about Santipooore, mixed with light-colored cane. Grows also near Calcutta; in some fields separate, in others mixed with pooree, or light-colored cane. When eaten raw, is more dry and pithy in the mouth, but esteemed better sugar than the pooree, and appears to be the superior sort of cane. Persons who have been West India planters do not know it as a West India cane.

2. The *light-colored cane*, yellow, inclining

to white; deeper yellow when ripe, and on rich ground. West India planters say it is the same sort as that which grows in the West India Islands; softer, more juicy than the Cadjoolee, but juice less rich, and produces sugar less strong; requires seven maunds of pooree juice to make as much goor or inspissated juice as is produced from six of the Cadjoolee. Much of this kind is brought to the Calcutta markets, and eaten raw.

3. The *white variety*, which grows in swampy lands, is light-colored, and grows to a great height. Its juice is more watery, and yields a weaker sugar than the Cadjoolee. However, as much of Bengal consists of low grounds, and as the upland canes are liable to suffer from drought, it may be advisable to encourage the cultivation of it, should the sugar it produces be approved, though in a less degree than other sugars, in order to guard against the effects of dry seasons. Experience alone can determine how far the idea of encouraging this sort may answer.

Punsaree, Reonda, Mungoo, Newar, Kiwarhee.—Different sorts produced in the Benares district;—probably some of them may be of the sorts already described. The *punsaree* and *reonda* appear to be the most productive and the most esteemed.

Besides the foregoing, several kinds are now known to the Indian planter. One of them, the China sugar-cane, was considered by Dr. Roxburgh to be a distinct species, and distinguished by him as *Saccharum Sinensis*. It was introduced here, in 1796, by Earl Cornwallis, as being superior to the native kinds. It is characterized by a hardness which effectually resists most of the country rude mills; but this hardness is importantly beneficial, inasmuch as that it effectually resists the attacks of the white ants, hogs, and jackals, which destroy annually a large portion of the common cane.

Dr. Buchanan found that four kinds were known in Mysore. Two of these are probably the purple and white generally known; but as this is not distinctly stated, I have retained the form in which he notices them. *Restali*, the native sugar of the Mysore, can only be planted in the last two weeks of March and first two of April. It completes its growth in twelve months, and does not survive for a second crop. Its cultivation has been superseded by the other.

Puttaputti.—This was introduced from Arcot during the reign of Hyder Ally. It is the only one from which the natives can extract sugar; it also produces the best *Bella* or *Jagory*. It can be planted at the same season as the other, as well as at the end of July and beginning of August. It is fourteen months in completing its growth; but the stools produce a second crop, like the ratoons of the West Indies, which ripen in twelve months.

Marucabo, Cuttaycabo.—These two are

very small, seldom exceeding half an inch in diameter; yet in some districts of Mysore, as about Colar, the last named is the variety usually cultivated; but this arises from its requiring less water than the larger varieties.

The best varieties are those introduced from the islands of Otaheite and Bourbon. Hindostan is indebted for their introduction to Captain Sleeman, who brought them hither from the Mauritius in 1827. He committed them to Dr. Wallich, under whose care, at the Botanic Garden, they have flourished, and been the source from whence the benefit has been generally diffused. Their superiority over those which have been usually cultivated by the natives has been completely established. The largest of the Hindostan canes, ripe and trimmed, ready for the mill, has never been found to exceed five pounds; but it is not uncommon for an Otaheite cane,* under similar circumstances, to weigh seven pounds. The extra weight arises proportionately from an increased secretion of superior sap. The sugar is more abundant, granulates more readily, and has less scum. Other superior qualities are, that the canes ripen earlier, and are less injured by the occurrence of protracted dry weather.

Of the history of the sugar-cane, a popular tradition obtains among the natives, that, in very ancient times, a vessel belonging to their country chanced, by accident, to leave one of her crew, under a desperate fit of sickness, at a desert island at a considerable distance in the Eastern seas, and that, returning by the same route, curiosity prompted them to inquire after the fate of their companion, when, to their utter astonishment, the man presented himself to their view, completely recovered from his sickness, and even in a state of more than common health. With anxiety, they inquired for the physic he had so successfully applied, and were conducted by him to the sugar-cane, on which, he acquainted them, he had solely subsisted from the time of their departure. Attracted by such powerful recommendation, every care and attention was bestowed, we may suppose, to convey such an invaluable acquisition to their own lauds, where the soil and climate have, mutually, since contributed to its present prosperity.

The Ryots consider the sugar-cane, and also the betel-plant, in a sacred and superior light: they even place it among the number of their deotchs. The first fifteen days of Koar, (or September,) termed Peetereputch, are de-

* Many are of opinion, founded on their experience, that although the juice of this cane is larger in quantity, yet that it contains less sugar. There is some sense in the reason they assign, which is, that in the Mauritius and elsewhere, it has the full time of twelve or fourteen months allowed for its coming to maturity—whereas the agriculture of India, and especially in Bengal, only allows it eight or nine months, which, though ample to mature the smaller country canes, is not sufficient for the Otaheite.

voted by the Hindoos to religious ceremonies and offerings on account of their deceased parents, relations, and friends. Such of them as have been bereft of their parents refrain from every indulgence during the said period, as being the season of mourning and mortification; and as they deem the performance of the higher rites of their religion (such as making offerings of sweetmeats, cloths, jewels, &c., in the temples of their several deities, and also the sacrifices denominated *Howm-jugg*, &c.) a pleasure and enjoyment, these are likewise carefully avoided.

The sacred appellation of the cane among the Ryots is *Nag' bele*, and hence, for the reasons above stated, the immediate owners of the cane plantations sedulously refrain from repairing to, or even beholding them during the continuance of the *Peetereputch*. On the 25th of Cartick, (or October,) termed by the Ryots *Deuthan*, they proceed to the fields, and, having sacrificed to *Nag' bele*, a few canes are afterwards cut and distributed to the Brahmans. Until these ceremonies are performed, according to the rules of established usage and custom, no persuasion or inducement can prevail upon any of them to taste the cane, or to make any use whatever of it.

On the 25th of Jeyte, (or May,) termed the *Desharah*, another usage is strictly adhered to. As it is usual with the Ryots to reserve a certain portion of the canes of the preceding year, to serve as plants for their new cultivation, it very frequently happens that inconsiderable portions of cane remain unexpended after the said cultivation has been brought to a conclusion. Wherever this happens to be the case, the proprietor repairs to the spot, and, having sacrificed to *Nag' bele*, as before stated, he immediately sets fire to the whole, and is exceedingly careful to have the operation executed in as complete and efficacious a manner as possible.

The cause of this extraordinary practice proceeds from a superstitious notion of a very singular kind. The act is committed from an apprehension that if the old canes were allowed to remain in the ground beyond the 25th of Jeyte, they would in all probability produce flowers and seed, for the appearance of these flowers they consider as one of the greatest misfortunes that can befall them.

They unanimously assert, that if the proprietor of a plantation happens to view even a single cane therein which is in flower, the greatest calamities will befall himself, his parents, his children, and his property; in short, that death will sweep away most of the members, or indeed the whole of his family, within a short period of time after his having seen the cane thus in flower. If the proprietor's servant happens to see the flower, and immediately pulls it from the stalk, buries it in the earth, and never reveals the circumstance to his master, in this case they believe that it will not be productive of any evil

consequences; but should the matter reach the proprietor's knowledge, the calamities before stated must, according to their ideas, infallibly happen.

"I am informed," said a late resident at Benares, "that there is a species of cane called *Kutharee*, cultivated in or near the district of *Churuparun*, and upon the banks of the *Gagra*, which is not cut down by the cultivators thereof until the canes are in flower. Having mentioned this circumstance to some of the Ryots of Benares, to convince them of the absurdity of ascribing the common misfortunes incident to human existence and exertion to the evil influence of a cane-flower, they only replied, that the *Kutharee* cane might perhaps be an exception to what they had stated as the sum of their faith on this head; such faith being, however, invariably corroborated by the result of long observation and experience in this *Zemindary*."

Soil.—The soil best suiting the sugar-cane is aluminous rather than the contrary, tenacious without being heavy, readily allowing excessive moisture to drain away, yet not light. One gentleman, Mr. Ballard, has endeavored to make this point clear by describing the most favorable soils about *Gazepore* as "*light clays*," called there *Motéarée* or *doansa*, according as there is more or less sand in their composition.

Mr. Piddington seems to think, that calcareous matter, and iron in the state of *peroxide*, are essential to be present in a soil for the production of a superior sugar-cane. There can be no doubt that the calcareous matter is necessary, but experience is opposed to his opinion relative to the peroxide.

The soil preferred at *Radnagore* is there distinguished as the soil of "two qualities," being a mixture of rich clay and sand, and which Mr. Touchet believed to be known in England as a light brick-mould. In other districts this soil is described as *Dobrussah*, or two-juiced.

About *Rungpore*, *Dinajpore*, and other places where the ground is low, they raise the beds where the cane is to be planted four or five feet above the level of the land adjacent.

The experience of Dr. Roxburgh agrees with the preceding statements. He says: "The soil that suits the cane best in this climate is a rich vegetable earth, which, on exposure to the air, readily crumbles down into very fine mould. It is also necessary for it to be of such a level as allows of its being watered from the river by simply draining it up, (which almost the whole of the land adjoining to this river, the *Godavery*, admits of,) and yet so high as to be easily drained during heavy rains. Such a soil, and in such a situation, having been well meliorated by various crops of leguminous plants, or fallowing for two or three years, is slightly manured, or has had for some time cattle pent upon it. A

favorite manure for the cane with the Hindoo farmer is the rotten straw of green and black pesseloo (*Phaseolus Mungo max*)."

Many accordant opinions might be added to the preceding, but it seems only necessary to observe farther, that "the sugar-cane requires a soil sufficiently elevated to be entirely free from inundation, but not so high as to be deprived of moisture, or as to encourage the production of white ants (*termites*)."

The sugar-cane is an exhausting crop, and it is seldom cultivated by the Ryot more frequently than once in three or four years on the same land. During the intermediate period, such plants are grown as are found to improve the soil, of which, says Dr. Tennant, the Indian farmer is a perfect judge. They find the leguminous tribe the best for the purpose. Such long intervals of repose from the cane would not be requisite if a better system of manuring was adopted.

Mr. J. Prinsep has recorded the following analysis of three soils distinguished for producing sugar. They were all a soft, fine-grained alluvium, without pebbles. No. 1 was from a village called Mothe, on the Sarjee, about ten miles north of the Ganges at Buxar, and the others from the south bank of the Ganges, near the same place. There is a substratum of *kunkar* throughout the whole of that part of the country, and to some mixture of this earth with the surface soil. the fertility of the latter is ascribed :

	1	2	3
Hygrometric moisture, on drying at 212 degrees.....	2.5..	2.1..	3.6
Carbonaceous and vegetable matter, on calcination.....	1.8..	2.1..	4.0
Carbonate of lime (No. 3 effervescent).....	1.6	0.6..	3.0
Alkaline salt, soluble.....	1.0..	1.1..	0.3
Silex and alumina.....	94.1..	94.1..	88.2
	100.0.	100.0.	100.0

The earths, unfortunately, were not separated. Mr. Prinsep says the first two were chiefly of sand, and the third somewhat argillaceous. The first two required irrigation, but the other was sufficiently retentive of moisture to render it unnecessary.

Manures.—The sugar-cane being one of the most valued crops of the Ryot, he always devotes to it a portion of the fertilizing matters he has at command, though in every instance this is too small.

In the Rajahmundry district, previously to planting, the soil is slightly manured, either by having cattle folded upon it, or by a light covering of the rotten straw of the green and black pesseloo, which is here a favorite fertilizer. In some parts of Mysore the mud from the bottom of tanks is employed, and this practice is more generally adopted in other places. Thus the fields being divided by deep ditches in Dinajpoor, the mud from which is enriched by the re-

mains of decayed aquatic plants and animals, form an excellent manure for the sugar-cane, and of this the Ryots make use, spreading it over the surface before the plowing is commenced ; and when that operation is completed, the soil is farther fertilized by a dressing of oilcake and ashes.

Crushed bones would unquestionably be of the greatest benefit if applied to the sugar-cane crop. Not only their animal matter would serve as food for the plants, but the phosphate of lime of the bones is one of the chief saline constituents of the sugar-cane.

Salt is another valuable manure for this crop. Dr. Nugent, in a report made to the Agricultural Society of Antigua, observes that salt has been found a valuable auxiliary in cultivating the sugar-cane. Many trials of it, he says, have been made during successive seasons, applied generally to the extent of about nine or ten bushels per acre. It destroys grubs and other insects, and gives the canes an increased vigor and ability to resist drought. It is a singular remark of the intelligent traveler, M. de Humboldt, while speaking of the practice adopted in the Missions of the Orinoco, when a cocoa-nut plantation is made, of throwing a certain quantity of salt into the hole which receives the nut, that of all the plants cultivated by man there are only the sugar-cane, the plantain, the mammee, and the Avocada pear, which endure equally irrigation with fresh and salt water.

In the West Indies, when the cane is affected by what is called there the *blast*, which is a withering or drying up of the plants, an unfailing remedy is found to be watering them with an infusion of dung in salt water.

Preparation of Soil.—In the Rajahmundry district, during the months of April and May, the ground is frequently plowed, until brought into a very fine tilth. About the end of May, or beginning of June, the rains usually commence, and the canes are then to be planted. If the rains do not set in so early, the land is flooded artificially, and when converted into a soft mud, whether by the rain or by flooding, the canes are planted.

In Mysore the ground is watered for three days, and then, after drying for the same period, plowing commences, this operation being repeated five times during the following eight days. The clods during this time are broken small by an instrument called *col kudali*. The field is then manured and plowed a sixth time. After fifteen days it is plowed again, twice in the course of one or two days. After a lapse of eight days it is plowed a ninth time. Altogether these operations occupy about forty-four days.

For planting, which is done in six days,

an implement called *yella kudali* is employed.

In Dinajpoor, "the field from about the middle of October until about the 10th of January, receives ten or twelve double plowings, and after each is smoothed with the *moyi*. During the last three months of this time it is manured with cow-dung, and mud from ponds and ditches. On this account, the land fit for sugar-cane is generally divided into fields by wide ditches, into which much mud is washed by the rain, and is again thrown on the fields when the country dries, and leaves it enriched by innumerable aquatic vegetables and animals that have died as the water left them. When the plowing has been completed, the field is manured with ashes and oilcake."

About Malda, "the land is first plowed in the month of Cartick, length and breadth ways, and harrowed in like manner; four or five days after, it is again plowed and harrowed, as before, twice. In the month of Aghun, the whole land is covered with fresh earth, again twice plowed, and harrowed in different directions, and then manured with dung. Fifteen or twenty days afterward it is to be twice plowed, as before; eight or ten days after which it is to be slightly manured with dung, and the refuse of oil, mixed together; then twice plowed and harrowed in different directions, so that the clods of earth brought be well mixed together with the land. This preparation continues until the 20th or 25th of the month Pows."

In the vicinity of Dacca, during "Cartick or Augun, (October, November,) the Ryots begin to prepare their ground. They first dig a trench round their fields, and raise a mound of about three feet in height. If the ground to be cultivated be waste, about nine inches of the surface are taken off, and thrown without the inclosure. The ground is plowed to the depth of nine inches more. The clods are broken, and the earth made fine. In Maug or Faugun, (January, February,) the sugar-cane is planted; a month afterward earth is raised about the plants; after another month this is repeated. The crop is cut in Poous and Maug (December, January.) If the ground be not waste, but cultivated, the surface is not taken off. After cutting the crop, it is not usual again to grow sugar-cane on the same ground for eighteen months, on account of the indifferent produce afforded by a more early planting."

In the Zillah, North Moorabad, the land is broken up at the end of June. After the rains have ceased it is manured, and has eight or ten plowings. This clears it of weeds. In February it is again manured and plowed four or five times, and just before the sets are planted, some dung, four cart-

loads to each cutcha beegah of low land, and five cart loads, if high land, are added. The land is well rolled after the last four plowings, and again after the cuttings are set.

About Benares and the neighboring districts Mr. Haines says, that owing to the hot winds which prevail "from March until the setting in of the annual rains in June or July, the lands remain fallow till that period. In the mean time, those fields that are selected for sugar-cane are partially manured by throwing upon them all manner of rubbish they can collect, and by herding their buffaloes and cattle upon them at night, though most of the manure from the latter source is again collected and dried for fuel.

"When the annual rains have fairly set in, and the Assarree crops sown, (in some instances I have seen an Assarree crop taken from the lands intended for sugar-cane,) they commence plowing the cane lands, and continue to do so four or five times monthly (as they consider the greater number of times the fields are turned up at this period of the season, the better the crop of cane will be) till the end of October, continuing to throw on the little manure they can collect.

"Toward the end of October, and in November, their plows are much engaged in sowing their winter (or rubbee) crops of wheat, barley, grain, &c.; and at this period they make arrangements with the shepherds who have large flocks of sheep, to fold them upon the fields at night, for which they pay so much per beegah in grain.

"During the latter part of November, and early in December, the fields are again plowed well, and all grass, weeds, &c., removed with the hoe; then the surface of the field is made as smooth as possible by putting the hengah (a piece of wood eight to ten feet in length, and five or six in breadth, and three or four inches in thickness, drawn by two pairs of bullocks, and the man standing upon the wood to give it weight) over several times for three or four days in succession. This makes the surface of the field very even, and somewhat hard, which prevents the sun and dry west wind from abstracting the moisture, which is of great importance at this period of the season, for, should there be no rain, there would not be sufficient moisture at the time of planting the cane to cause vegetation.

"In this state the lands remain till the time of planting the cane cuttings, which is generally the 1st to the 15th February; but should there have been a fall of rain in the mean time, or excess of moisture appear, the field is again plowed, and the hengah put over as before.

"A day or two previous to planting the cane, the field is plowed and the hengah lightly put over."

Sets.—When the canes are cut at harvest

time, twelve or eighteen inches of their tops are usually taken off, and stored, to be employed, for sets. Each top has several joints, from each of which a shoot rises, but seldom more than one or two arrive at a proper growth.

When first cut from the stem, the tops intended for plants are tied in bundles of forty or fifty each, and are carefully kept moist. In a few days they put forth new leaves: they are then cleared of the old leaves, and separately dipped into a mixture of cow-dung, pressed mustard-seed, and water. A dry spot is prepared, and rich loose mould and a small quantity of pressed mustard-seed; the plants are separately placed therein, a small quantity of earth strewed among them, and then covered with leaves and grass, to preserve them from heat. Ten or twelve days afterward they are planted in the fields.

In Burdwan, the tops, before they are planted, are cut into pieces from four to six inches long, so that there are not less than two nor more than four knots in each. Two or three of these plants are put together when planted, and a beegah requires from 7,500 to 10,240 plants.

In Rungpore and Dinajpore, about 9,000 plants are required for a beegah, each being about a foot in length.

In Beerbhoom, 3,000 plants are said to be requisite for a beegah, each plant being about fifteen inches long.

Near Calcutta, from 3,000 to 8,000 plants are required for a beegah, according to the goodness of the soil, the worst soil requiring most plants.

In Mysore an acre contains 2,420 stools, and yields about 11,000 ripe canes.

Near Rajahmundry, about 400 cuttings are planted on a cutcha beegah (one-eighth of an acre.) In Zilla, North Mooradabad, 4,200 sets, each eight inches long, are inserted upon each cutcha beegah of low land, and 5,250 upon high land.

In the district of Gollagore the Ryots cut a ripe cane into several pieces, preserving two or three joints to each, and put them into a small bed of rich mould and dung, and mustard-seed, from which the oil has been expressed. At Radnagore, when the time of cutting the canes arrives, their tops are taken off, and these are placed upright in a bed of mud for thirty or forty days, and covered with leaves or straw. The leaves are then stripped from them, and they are cut into pieces, not having less than two, nor more than four joints each. These sets are kept for ten or fifteen days in a bed prepared for them, from whence they are taken and planted in rows two or three together, eighteen inches or two feet intervening between each stool. The number of sets planted varies from 7,500 to 10,240 per beegah.

Planting.—The time and mode of planting vary. In the Rajahmundry Circar, Dr. Roxburgh says, that “during the months of April and May the land is repeatedly plowed with the common Hindoo plow, which soon brings this loose rich soil (speaking of the Delta Godavery) into very excellent order. About the end of May and beginning of June, the rains generally set in, in frequent heavy showers. Now is the time to plant the cane; but should the rains hold back, the prepared field is watered, flooded from the river, and, while perfectly wet, like soft mud, whether from the rain or the river, the cane is planted.

“The method is most simple. Laborers with baskets of the cuttings, of one or two joints each, arrange themselves along one side of the field. They walk side by side, in as straight a line as their eye and judgment enable them, dropping the sets at the distance of about eighteen inches asunder in the rows, and about four feet row from row. Other laborers follow, and with the foot press the set about two inches into the soft, mud-like soil, which, with a sweep or two with the sole of the foot, they most easily and readily cover.”

About Malda, in the month of Maug (January, February) the land is to be twice plowed, and harrowed repeatedly, length and breadth ways; after which it is furrowed, in furrows half a cubit apart, in which the plants are to be set at about four fingers' distance from each other, when the furrows are filled up with the land that lay upon its ridges. The plants being thus set in, the land is then harrowed twice in different directions; fifteen or twenty days afterward the cane begins to grow, when the weeds which appear with it must be taken up; ten or twelve days after this the weeds will again appear. They must again be taken up, and the earth at the roots of the canes be removed, when all the plants which have grown will appear.

At Ghazepore the rains set in at the beginning of March, and planting then commences.

Near Calcutta the planting takes place in May and June. In Dinajpore and Rungpore the planting time is February.

About Commercolly it is performed in January. The field is divided into beds six cubits broad, separated from each other by small trenches fourteen inches wide and eight inches deep. In every second trench are small wells, about two feet deep. The irrigating water flowing along the trenches fills the wells, and is taken thence and applied to the canes by hand.

Each bed has five rows of canes. The sets are planted in holes about six inches indiameter and three deep; two sets, each having three joints, are laid horizontally in every

hole covered slightly with earth, and over this is a little dung.

When the canes are planted in the spring, the trenches must be filled with water, and some poured into every hole. At the other season of planting the trenches are full, it being rainy weather; but even then the sets must be watered for the first month.

Mr. Haines says, that in Mirzapore and the neighboring districts, "in planting the cane they commence a furrow round the field, in which they drop the cuttings. The second furrow is left empty; cuttings again in the third; so they continue dropping cuttings in every second furrow till the whole field is completed, finishing in the centre of the field. The field remains in this state till the second or third day, when for two or three days in succession it is made even and hard upon the surface with the hengah, as before stated."

Mr. Vaupell, in describing the most successful mode of cultivating the Mauritius sugar-cane at Bombay, says, that "after the ground is leveled with the plow, called 'paur,' in the manner of the cultivators, pits of two feet in diameter and two feet in depth should be dug throughout the field at the distance of five feet apart, and filled with manure and soil to about three inches of the surface. Set in these pits your canes, cut in pieces about a foot and a half long, laying them down in a triangular form. Keep as much of the eyes or shoots of the cane uppermost as you can; then cover them with manure and soil. Beds should next be formed to retain water, having four pits in each bed, leaving passages for watering them. The cuttings should be watered every third day during hot weather, and the field should always be kept in a moist state."

About Benares, the sets require, after planting, from four to six waterings, until the rains commence, and as many hoeings to loosen the surface, which becomes caked after every watering. The moister nature of the soil renders these operations generally unnecessary in Bengal.

After-culture.—In Mysore the surface of the earth in the hollows in which the sets are planted is stirred with a stick as soon as the shoots appear, and a little dung is added. Next month the daily water is continued, and then the whole field dug over with the hoe, a cavity being made round each stool, and a little dung added. In the third month water is given every second day; at its close, if the canes are luxuriant, the ground is again dug; but if weakly, the watering is continued during the fourth month before the digging is given. At this time the earth is drawn up about the canes, so as to leave the hollows between the rows at right angles with the trenches. No more water is given to the plants, but the trenches between the

beds are kept full for three days. It is then left off for a week, and if rain occurs no farther water is requisite; but if the weather is dry, water is admitted once a week during the next month. The digging is then repeated, and the earth leveled with the hand about the stools.

The stems of each stool are ten to twelve in number, which are reduced to five or six, by the most weakly of them being now removed. The healthy canes are to be tied with one of their own leaves, two or three together, to check their spreading; and this binding is repeated as required by their increased growth.

In the absence of rain, the trenches are filled with water once a fortnight.

When the *Puttaputti* is to be kept for a second crop, the dry leaves cut off in the crop season are burnt upon the field, and this is dug over, the trenches filled with water, and during six weeks the plants watered once in every six or eight days (unless rain falls,) and the digging repeated three times, dung being added at each digging. The after-culture is the same as for the first crop.

In the Upper Provinces, Dr. Tennant says, if moderate showers occur after planting, nothing more is done until the shoots from the sets have attained a height of two or three inches. The soil immediately around them is then loosened with a small weeding-iron, something like a chisel; but if the season should prove dry, the field is occasionally watered; the weeding is also continued, and the soil occasionally loosened about the plants.

In August small trenches are cut through the field, with small intervals between them, for the purpose of draining off the water, if the season is too wet. This is very requisite; for if the canes are now supplied with too much moisture, the juices are rendered watery and unprofitable. If the season happens to be dry, the same dikes serve to conduct the irrigating water through the field, and to carry off what does not soak into the earth in a few hours. Stagnant water they consider very injurious to the cane, and that on the drains being well-contrived depends in a great measure the future hopes of profit. Immediately after the field is trenched, the canes are propped. They are now about three feet high, and each set has produced from three to six canes. The lower leaves of each are first carefully wrapt up around it, so as to cover it completely in every part; a small strong bamboo, eight or ten feet long, is then inserted firmly in the middle of each stool, and the canes tied to it. This secures them in an erect position, and facilitates the circulation of the air.

Hoeing cannot be repeated too frequently. This is demonstrated by the practice of the

most successful cultivators. In Zilla, N. Mooradabad, in April, about six weeks after planting, the earth on each side of the canerows is loosened by a sharp-pointed hoe, shaped somewhat like a bricklayer's trowel. This is repeated six times before the field is laid out in beds and channels for irrigation. There, likewise, if the season is unusually dry, the fields in the low ground are watered in May and June. This supposes there are either nullahs, or ancient pukka wells, otherwise the canes are allowed to take their chance, for the cost of making a well on the uplands is from ten to twenty rupees—an expense too heavy for an individual cultivator, and not many would dig in partnership, for they would fight for the water.

In the vicinity of Benares, as the canes advance in growth, they continue to wrap the leaves as they begin to wither up round the advancing stem, and to tie this to the bamboo higher up. If the weather continue wet, the trenches are carefully kept open; and, on the other hand, if dry weather occurs, water is occasionally supplied. Hoeing is also performed every five or six weeks. Wrapping the leaves around the cane is found to prevent them cracking by the heat of the sun, and hinders their throwing out lateral branches.

In January and February the canes are ready for cutting. The average height of the cane is about nine feet, foliage included, and the naked cane one inch to one inch and a quarter in diameter.

Near Maduna, the hand-watering is facilitated by cutting a small trench down the centre of each bed. The beds are there a cubit wide, but only four rows of canes are planted in each.

It is deserving of notice, that the eastern and north-eastern parts of Bengal are more subject to rain at every season of the year, but especially in hot months, than the western; which accounts for the lands being prepared and the plants set so much earlier in Rungpore than in Beerbhoom. This latter country has also a drier soil generally; for this reason, so much is said in the report from thence of the necessity of watering.

The Benares country is also drier than Bengal, therefore more waterings are requisite.

At Malda, "ten or fifteen days after the earth has been removed from the roots of the canes and the plants have appeared, the land is to be slightly manured, well cleared of weeds, and the earth that was removed again laid about the canes; after which, ten or fifteen days, it must be well weeded, and again twenty or twenty-five days afterward. This mode of cultivation it is necessary to follow until the month of Joystee. The land must be plowed and manured between the rows of canes in the month of Assaar;

after which, fifteen or twenty days, the canes are to be tied two or three together with the leaves, the earth about them well cleaned, and the earth that was plowed up laid about the roots of the canes something raised. In the month of Saubun, twenty or twenty-five days from the preceding operation, the canes must be again tied as before, and again ten or fifteen days afterward; which done, nine or ten clumps are then to be tied together. This care to be taken until the end of the month Saubun; after which, in the month of Bhaddur, they must be tied with the cane-leaves as before, and again in Assen, when the cultivation is completed."

In the Rajahmundry Circar, on the Delta of the Godavery, Dr. Roxburgh states, "that nothing more is done after the cane is planted, if the weather be moderately showery, till the young shoots are some two or three inches high; the earth is then loosened for a few inches round them with a small weeding iron, something like a carpenter's chisel. Should the season prove dry, the field is occasionally watered from the river, continuing to weed and keep the ground loose around the stools. In August, two or three months from the time of planting, small trenches are cut through the field at short distances, and so contrived as to serve to drain off the water, should the season prove too wet for the cane, which is often the case, and would render their juices weak and unprofitable. The farmer, therefore, never fails to have his field plentifully and judiciously intersected with drains while the cane is small, and before the usual time for the violent rains. Should the season prove too dry, these trenches serve to conduct the water from the river the more readily through the field, and also to drain off what does not soak into the earth in the course of a few hours; for they say if water is permitted to remain in the field for a greater length of time, the cane would suffer by it, so that they reckon these drains indispensably necessary, and upon their being well contrived depends in a great measure their future hopes of profit. Immediately after the field is trenched, the canes are all propped; this is an operation I do not remember to have seen mentioned by any writer on this subject, and is probably peculiar to these parts. It is done as follows:

"The canes are now about three feet high, and generally from three to six from each set that has taken root from what we may call the stool. The lower leaves of each cane are first carefully wrapt up around it, so as to cover it completely in every part; a small strong bamboo (or two,) eight or ten feet long, is then stuck into the earth in the middle of each stool, and the canes thereof tied to it. This secures them in an erect position, and gives the air free access round

every part. As the canes advance in size, they continue wrapping them round with the lower leaves as they begin to wither, and to tie them to the prop bamboos higher up; during which time, if the weather is wet, they keep the drains open, and if a drought prevails they water them occasionally from the river, cleaning and loosening the ground every five or six weeks. Tying the leaves so carefully round every part of the canes, they say, prevents them from cracking or splitting by the heat of the sun, helps to render the juice richer, and prevents their branching out round the sides. It is certain you never see a branchy cane here."

In Dinajpoor, in about a month after planting, "the young plants are two or three inches high; the earth is then raised from the cuttings by means of a spade, and the dry leaves by which they are surrounded are removed. For a day or two they remain exposed to the air, and are then manured with ashes and oilcake, and covered with earth. Weeds must be removed as they spring; and when the plants are about a cubit and a half high, the field must be plowed. When they have grown a cubit higher, which is between the 13th of June and the 14th of July, they are tied together in bundles of three or four, by wrapping them round with their own leaves. This is done partly to prevent them from being laid down by the wind, and partly to prevent them from being eaten by jackals. During the next month three or four of these bunches are tied together; and about the end of September, when the canes grow rank, they are supported by bamboo stakes driven in the ground. They are cut between the middle of December and the end of March."

If the canes grow too vigorously, developing a superabundance of leaves, it is a good practice to remove those which are decayed, that the stems may be exposed fully to the sun. In the West Indies, this is called *trashing* the canes. It requires discretion; for in dry soils or seasons, or if the leaves are removed before sufficiently dead, more injury than benefit will be occasioned.

Harvesting.—The season in which the canes become ripe in various districts has already been noticed when considering their cultivation. In addition I may state, that in the Rajahmundry Circar, about the mouth of the Godavery, Dr. Roxburgh states, "that in January and February the canes begin to be ready to cut, which is about nine months from the time of planting. This operation is the same as in other sugar countries—of course I need not describe it. Their height, when standing on the field, will be from eight to ten feet, (foliage included,) and the naked cane from an inch to an inch and a quarter in diameter."

In Malda, the canes are cut in January and

February. In N. Mooradabad, upon the low land, the canes are ripe in October, and upon the high lands a month later. The fitness of the cane for cutting may be ascertained by making an incision across the cane, and observing the internal grain. If it is soft and moist, like a turnip, it is not yet ripe; but if the face of the cut is dry, and white particles appear, it is fit for harvesting.

Injuries.—1. *A wet season*, either during the very early or in the concluding period of the cane's vegetation, is one of the worst causes of injury. In such a season, the absence of the usual intensity of light and heat causes the sap to be very materially deficient in saccharine matter. But on the other hand,

2. *A very dry season*, immediately after the sets are planted, though the want of rain may in some degree be supplied by artificial means, yet the produce under such circumstances proves but indifferent. These inconveniences are of a general nature, and irremediable.

3. *Animals.*—Not only the incursions of domesticated animals, but in some districts of the wild elephant, buffalo, and hog, are frequent sources of injury. Almost every plantation is liable, also, to the attack of the jackal.

4. *White Ants.*—The sets of the sugar-cane have to be carefully watched, to preserve them from the white ant, (*Termites fatale*,) to attacks from which they are liable until they have begun to shoot. To prevent this injury, the following mixture has been recommended:

Asafetida, (hing,) 8 chittacks.

Mustard-seed cake, (sarsum ki khali,) 8 seers.

Putrid fish, 4 seers.

Bruised butch root, 2 seers; or muddur, 2 seers.

Mix the above together in a large vessel, with water sufficient to make them into the thickness of curds; then steep each slip of cane in it for half an hour before planting; and, lastly, water the lines three times previous to setting the cane, by irrigating the water-course with water mixed up with bruised butch root, or mudder, if the former be not procurable.*

5. *Storms.*

6. *The Worm.*

7. *The Flowering.*

SUGAR CULTURE IN WEST INDIES.

—The following essay, received several years ago, the prize of one hundred guineas, offered

* That the above application would be beneficial, is rendered still more worthy of credit from the following experience:—In the Dhoon, the white ant is the most formidable enemy to the sugar planter, owing to the destruction it causes to the sets when first planted. Mr. G. H. Smith says, that there is a wood very common there, called by the natives *Butch*, through which, they say, if the irrigating waters are passed in its progress to the beds, the white ants are driven away.

by Lord Elgin, then governor of Jamaica, for the best practical treatise upon the subject. We have supposed it might interest our planters to know what systems their neighbors have been adopting, though no great practical good should be derived from the information.—Ed.

Commence by subdividing the old cane-fields, or such parts of them as may be suitable to receive the plow, into sections, by substantial and durable fences, and in the most convenient manner to save fencing and promote draining. Fences may be growing fences, or ditch and penguin. As ditches may be necessary in many parts, in carrying out the principle of draining and retaining water for stock, they will be found beneficial, and may be planted on the top of the bank with any of the growing fences found on experience to be the most substantial, durable and least expensive, and least likely to harbor rats.

The next important duty is to drain the land by under-drains, which can be dug by machinery, the tiles necessary for draining being made on the spot, by machinery. These points accomplished are the most expensive outlay at the commencement, but will be attended by a durable benefit. The next duty is to manure the land as high as you possibly can, by penning it over with horned stock, or sheep, or stable, or cattle-pen dung, given in any way by which its virtues are saved to the soil, covering the pens immediately after they are removed, with a coat of loam, or if stiff clayey land, with lime or marl. This done, close-plow the land with a common single "Wilkie's" plow, seven inches deep, following in the same furrow with the sub-soil, going to sixteen inches into the sub-soil, or deeper, if possible. Then roll and harrow the land, extracting the weeds and grass, and open it into cane holes with a deep single plow, cleaning out the holes with a deep double-breasted plow. Your next duty is to plant them, giving the canes an opportunity of growing in their favorite manner in clusters, or stools, and not in single file along the row. As you plant, cover the bank and cane-bed with cane-trash, dry grass, or any other suitable covering, with a view to keep down grass and weeds, and to protect the soil from that exhalation, which, in tropical climates, is so rapid and so detrimental to land. By these means the plant canes will give very little trouble until they are fit to take the bank, which can be given with the plow. Cane land, so managed, will require very little labor in weeding or hoeing, the principal part of such work being performed with suitable light plows, drills, harrows, scarifiers and other agricultural implements now in use in the United Kingdom. They not only eradicate grass and weeds, but turn up the soil and scatter seeds and manures of every kind, thereby saving a world of labor.

The principal part of the plowing and other

field-work, should be performed by horses, in which case three plowmen, six boys and eight good plow-horses, with the assistance of steers occasionally to break stiff land, or in sub-soiling it, will be sufficient to plow, sub-soil, roll and harrow, drill, scarify, mould and hoe, all the various crops on the model sugar farm, with the aid of a small gang occasionally to plant, weed, trash, heap and turn out manure, fencing, &c.

While on the subject of plowing, it may be as well to remark, that as the plow is now coming into general use throughout the island, and its beneficial effects freely admitted and tolerably well understood, all that remains for me, is to point out some improvement. The team of horses or steers should be brought as close as possible to the beam of the plow, and exactly in the centre. They should then walk with a quick step without stopping.

It is proved beyond a doubt by the British farmers, that the work is better performed and with greater ease to the stock, when the horses in the plow go at the rate of three miles an hour, than when traveling at the rate of one mile in the same space of time. Repeated stoppages and going slow, are fagging both to man and beast, and detrimental to the quantity and quality of the work. Oxen may be so trained, as to perform excellent work without flogging.

They ought to be stall-fed during the plow season, on a mixture of hay, corn and grass, and kept exclusively for the plow. The same rule should be extended to the plow-horses, with the addition of being well groomed twice a day. When the plow does not take ground, or is otherwise out of order, the means of repairing and altering it should be on the estate.

Ratoons should be plow-molded every year, during which operation any of the chemical or lately discovered manures may be applied, such as are found by experience to be congenial to the nature of that specific soil which is drawn by analysis. By analyzing the soil and the compost, or other chemical manure, it is soon found which description of manure will be most beneficial; or well-digested cattle pen or stable manure, harrowed into the bank so broken, and covered over with the trash so taken off, when clearing for the plow. This may be done by a couple of smart boys going before the plow, raking the trash on the bank last cut by the plow, and so on in rotation to the end of the piece; or a raker drawn by one horse may be invented to remove the trash. By this simple process, canes may be kept ratooning as long as you like. The plow-molding, with the application of manure in the bank, may be done at an early stage, that is, when the sprouts make their appearance.

As the canes are covering the ground, or soon after, the soil may again be disturbed, either by a light single one-horse plow, or by a scarifier, harrow-drill or horse-shoe, or

such of them as the sugar-farmer, on experience, finds to be most beneficial. By cutting the rooty fibres of the canes that push out in collateral directions, fresh ones immediately replace them, and take up such nourishment as they can find in the newly cut bank; a reinforcement of suckers will be the result, while fresh stability is added to the mother cane. It is to this end I recommend dung and manures annually to the ratoons, which, if properly done, places them pretty nearly on an equality with the plant canes, and planters of experience know that the cheapest sugar is that produced from ratoons under the old system, and it will be doubly so under mine. When you determine on throwing out a piece of ratoons, I recommend a rotation of crops, such as Guinea corn, Indian corn and green crops, of the most beneficial description, for benefiting the land and affording food both for man and beast. They may be of plantains, cocoas, cassadoes, ochres, peas and beans; yams, sweet potatoes, pumpkins, melons and turnips, if you can succeed in this hot climate. Next come artificial grasses, to be planted before or after the green crops. At this stage, you have the sample estate divided in the different crops—canes, corn, fallow and green crops, and a part in artificial grasses, sufficient to make hay for the stable, cutting grass for the pens, and sufficient feeding for your stock. By this rotation of crops, you improve and benefit the land and produce good crops at a very moderate expense, and with one-fourth of the manual labor necessary under the old system. The greatest attention should be paid to making manure in the field and at the works—the drainings of the stables and cattle-pens should be preserved, and carted out to the field where most required. The compound qualities of this manure are very powerful. A few boys and mule-carts would materially assist in carting out manure—bringing, feeding for the pens and stable, and carting loam, lime, marl, or any other ingredient deemed necessary to improve the land. After the first two years necessary to lay the foundation of this work, a small plant will be sufficient—say, at the utmost, from 20 to 25 acres a year, which, after a routine of crops and for years fed on by horned stock, horses, sheep, poultry and hogs—the land being in the first instance fenced, drained and sub-soiled—should, with moderate penning, give splendid returns in plants and ratoons.

Draining and Sub-soiling, being of the greatest benefit in producing large crops and improving the soil, I may as well give an idea of their merits. The old system of draining by open trenches was detrimental to the land during heavy rains, as a quantity of loose soil and manure were washed away into the gulleys and rivers. The land not being sub-soiled, the rain could not penetrate far into the soil; the land became caked with a few days of hot sun, which proved detrimental to

vegetation. When any quantity of moisture was retained on the surface, or in the upper strata, it heated and scalded the canes, while in the fall of the year or wintry months, it chilled them—in either case, checking vegetation and producing booty and woody joints, and thereby poor returns. The land being under-drained and sub-soiled 16 to 18 inches deep, the moisture soaks down through the soil into the sub-soil, from whence it escapes by the under-drains, leaving its chemical benefits in the soil while passing through it.

By this means, in a dry season, the canes or other crops receive sufficient coolness and moisture by evaporation from the sub-soil, which for the most part being stiff and clayey, continues cool and moist. It is a well-known chemical fact, that all the essential airs necessary for the preservation and benefit of the animal and vegetable world, are contained in the clouds, and reach the earth in wind and rain. Rain-water being highly charged with them, is deposited in the soil, giving a lively impulse to vegetation, and aiding the manures and natural stability of the soil—that is, when the land is under-drained and sub-soiled.

The drains are to be cut 30 inches deep, then lay a course of tiles on the bottom; after which, lay 12 inches of broken stones, to be covered on the top with sods, flat stones, slate, tiles or boards, to prevent the loose soil from getting amongst the stones and injuring the drain. The tiles prevent the stones from sinking into the clay, by which means the drains will be of long duration.

The sub-soil plow must enter 16 inches deep, leaving two inches on the top of the drains, clear of the plow. The land must be sub-soiled across the drains.

Manuring, etc.—A flock of sheep, consisting of from 200 to 300 head, and as many working steers, horses and mules, as may be necessary to carry on the trial sugar farm, with the assistance of some breeding stock necessary to supply it, and constantly fed on the sections of the cane fields thrown out to rest, and producing artificial grasses and green crops, would be sufficient to make 250 hogsheads.

Land so dressed, with a due regard to the laws of agricultural chemistry, and receiving an annual supply of manure, either simple or compound, such as are found by analysis or experience to agree best with the description of the soil, should average 2½ hogsheads (West India hogsheads average 18 cwt.) per acre through the crop, that is, from plants and ratoons. In this case, a field of one hundred acres would be sufficient, putting in an annual plant of twenty-five acres, and supplying the ratoons with manure. In addition to the necessary number of plow and cart men, very few field laborers would be required to plant, clean and trash the canes. The sugar farm should raise its own stock thus situated, and breed as many stock and

horse-kind as would be sufficient to carry on his farm successfully.

European farm laborers, if properly managed, are fully competent to perform a large proportion of the work necessary on this sugar farm.

Bourbon and Colored Canes.—The saving of labor being a matter of vital importance, permit me to remark that the Bourbon cane, so much admired for its superior yielding, is a very expensive cane, giving great trouble, and before it comes to maturity, requiring a great deal of labor.

It is a delicate cane, and very slow in its growth, requiring many cleanings before it covers the ground, and seldom takes a start until the fall of the year. It furnishes a scanty supply of dry leaves to cover the land and keep it cool. It gives a smaller proportion of tops to supply the cattle-pens with feeding, and to make manure, and it suffers more from trespass. It gives a smaller proportion of fuel compared to the other canes, and in every sense of the word, it is not, in these bad times, so good a poor man's cane as the Montblanc and blue canes, and black transparent canes. From the prejudices that formerly existed against the colored canes, they have been planted on light sandy soils, and in galls, in which the Bourbon cane could not long exist. But if these inferior canes were planted in your best lands, well manured, I am convinced they would, on an average of five or seven years, pay better than the Bourbon cane, and would, in this given period, in plants and ratoons, make as much sugar at nearly one-half of the expense. For example, they grow rapidly, and cover the ground quickly; they throw a great quantity of dry trash on the ground, and have a large bushy top that affords ample shade for the roots.

Comparatively speaking, they require very little weeding and trashing; they give ample protection to the land, by a deep cover of trash; they suffer less from the trespass of stock, hogs and rats, and the people do not eat them as they do the Bourbon cane. They give a great quantity of feeding for stock, and supply for the cattle-pens, and a larger quantity of trash from the mill than is necessary for fuel to manufacture the sugar. The overplus is a valuable ingredient for making manure, which may be fermented in cattle-pens, or in pits where it may receive dunder. The drainings of the stable and cattle-pens, the refuse of skimmings, the washings of cisterns, and all the sweepings and cleanings about the works may be added, and ashes, &c.

The white or Montblanc cane comes next in quality to the Bourbon, and may be successfully planted in the same piece, say every alternate row or two of Bourbon, and one of white cane. By this mixture, the extra trash from the latter assists in making up the deficiencies of the former.

The white and other colored canes suffer less from drought and poverty of soil, and ratoon better and much longer than the Bourbon cane, as they do not impoverish the land, but tend to improve it with proper culture.

A great deal more may be said in carrying out these leading principles into practical detail, but they are too numerous for this paper.

SUGAR ESTATE IN CUBA,

WITH ALL ITS APPURTENANCES, MARCH, 1846.

Lands—		
55½ caballerias,* at \$1,000.....	\$55,500 00	
28 of which are in cane,		
8 " pastures,		
2 " vegetables,		
3 " fallow,		
14½ " woods.		
Crop—		
20 caballerias of cane in good condition, at \$1,200	\$24,000 00	
8 ditto in poor condition.	4,000 00	
25,000 plantain trees, at 12½ cents.....	3,125 00	
Orchard trees, &c.....	100 00	
		31,225 00
Animals—		
125½ yoke of oxen, at \$59.50 ..	\$7,467 25	
30 mules, at \$51 00.....	1,530 00	
5 horses, at \$34 00.....	170 00	
15 cows, at \$25 00.....	375 00	
24 calves, at \$5 00.....	120 00	
267 sheep, at \$1 00.....	267 00	
		9,929 25
Negroes—		
4 negro overseers, at \$600..	\$2,400 00	
1 " machinist, 650..	650 00	
11 prime men, 1st class, 550..	6,050 00	
13 prime men, 2d class, 500..	6,500 00	
31 able men, 1st class, 450..	13,950 00	
57 able negroes, 400..	22,800 00	
28 " 350..	9,800 00	
12 " 300..	3,600 00	
2 " 250..	500 00	
10 " 200..	2,000 00	
3 " 150..	450 00	
10 negro boys, 100..	1,000 00	
6 " 50..	300 00	
		90,000 00
6 negro women (prime) 400..	2,400 00	
49 " 350..	17,150 00	
22 " 300..	6,600 00	
9 " 250..	2,250 00	
8 negro girls, 200..	1,600 00	
6 " 150..	900 00	
4 " 120..	480 00	
4 " 100..	400 00	
12 " 50..	600 00	
		32,380 00
Building—		
One large engine and boiling house, 250 feet long, of widths from 70 to 100 feet, with two steam-engines, four trains sugar pans of iron, on the Jamaica plan, and all necessary appurtenances.....	\$38,000 00	
Two large purging houses, built of stone and wood, with tiled roofs, for claying 11,000 pots of sugar, with railway conveniences, cars for railway, and machinery for raising and mixing clay, &c.....	25,000 00	

* One caballeria is equal to 33½ acres.

One large stone dwelling-house, with yard and garden attached.....	\$4,000 00
One large square block of stone buildings, 52 rooms, and yard in centre, for negro dwellings, size 300 by 200 feet.....	6,000 00
One square stone building, with yard in centre, divided into several large rooms, for a hospital.....	2,500 00
One large stone building, including the furnace for drying sugar, and the packing-room.....	6,000 00
One large house, 180 by 70 feet, for the purpose of drying cane-trash, with railways from the mill, &c.....	2,700,00
One small divided dwelling of stone, for the engineer and mayoral (overseer).....	1,500 00
One clock steeple, with clock and bell.....	800 00
One stable for fourteen horses.....	350 00
One coach-house.....	350 00
One small pump-house.....	250 00
Other minor buildings on different parts of the estate...	725 00
	<u>\$88,175 00</u>

Improvements—

One large stone reservoir for holding 12,000 cubic yards of water.....	5,000 00
One smaller ditto for watering cattle.....	2,000 00
One large stone water-tank, to contain 70 pipes of water.....	800 00
One well, 180 feet deep, with tanks, buckets and machinery for drawing water.....	500 00
Three wells on different parts of the estate.....	500 00
One bell-post and bell weighing 800 pounds.....	500 00
One kiln for burning tiles and bricks.....	300 00
One limekiln.....	200 00
One railway from the boiling-house to the purging-house.....	300 00
One railway for discharging the clay at a distance from the buildings.....	200 00
One railway for conveying fuel from the bagasse-house to the furnaces.....	200 00
One railway and cars for conveying sugar to the drying-house.....	300 00
4,848 fathoms of stone fence or wall, on the boundaries of the estate, at \$1 00.....	4,848 00
1,140 fathoms of hedge fence, at 25 cents.....	285 00
One large stone bridge and embankment over a stream on the estate.....	1,000 00
Several small stone bridges and stone drains for water on different parts of the estate.....	2,000 00
Two fire-engines, with hose, buckets, &c.....	1,000 00
Tools and utensils of every sort, including 34 ox-carts, those of the carpenters, masons, engineer, &c.....	2,221 00
	<u>22,154 00</u>

Sum total.....\$309,363 25

RECAPITULATION.

Lands.....	\$55,500 00
Crop.....	31,225 00
Animals.....	9,929 25
Negroes.....	102,380 00
Buildings.....	88,175 00
Improvements.....	22,154 00
Total.....	<u>\$309,363 25</u>

EXPENSES OF THE SAME ANNUALLY.

In cattle, horses and mules.....	\$2,300 00
Annual consumption of meat for 310 negroes, 140 lbs., at \$6 per 100 lbs.....	2,604 00
Annual consumption of corn, 325 lbs. per day, at \$1 20 per 100 lbs.....	1,423 50
800 mule loads of plantains, at 75 cents.....	600 00
Clothing, at \$3 50 per head.....	1,085 00
	<u>8,012 50</u>
Salary of administrator (agent).....	\$2,000 00
“ engineer.....	1,200 00
“ mayoral (overseer).....	500 00
“ majordomo (clerk).....	480 00
“ physician.....	510 00
“ two sugar boilers for six months.....	1,200 00
“ carpenters.....	1,000 00
“ plowman.....	300 00
“ mule-driver.....	300 00
“ men to take care of cattle.....	360 00
	<u>7,850 00</u>
Freight of transportation by mules of 4,000 boxes of sugar from the estate to the place of shipment, including storage, at \$1 75 per box.....	7,000 00
4,000 boxes, at \$1 per box.....	4,000 00
450 hides, at \$2 50.....	1,125 00
40 kegs of 10 and 12 penny nails, at \$8.....	320 00
15 kegs of 4 penny nails, at \$8.....	120 00
	<u>12,565 00</u>
Tax of 2½ per cent. on the value of the estate.....	\$7,734 00
Loss in negroes by death and total extinction of their value at fifty years.....	5,119 00
Minor expenses, including the hospital and medicine bill....	2,143 00
	<u>14,996 00</u>
Total.....	<u>\$43,423 50</u>

PRODUCE OF 4,000 BOXES, THE AVERAGE ANNUAL CROP.

1,333 boxes of white sugar, at \$4 50 per 100 lbs., 425 lbs. per box.....	\$25,493 62
1,333 boxes of brown sugar, at \$3 per 100 lbs.....	16,995 75
1,334 boxes of <i>cacuruche</i> brown at \$2 50 per 100 lbs.....	14,173 75
4,000 boxes, &c., paid by merchants, at \$3 25 per box.....	13,000 00
800 hogshheads of molasses, at \$2 50.....	2,000 00
	<u>71,663 12</u>
Deduct expenses.....	<u>43,423 50</u>
Net profits.....	<u>\$28,239 62</u>

SUGAR TRADE.—The sugar trade of the world has in the last ten or fifteen years undergone a great change, on account of the changed commercial policies of our own and other governments, the improved prosperity of the people of England and Europe as well as of the United States, leading to larger consumption on the one hand, while the development of the culture of the cane in Louisiana, and of beet sugar in Europe, has tended to enhance the general supply, which again has been checked by the course of the British and French governments in respect of their sugar colonies. The great reduction of the sugar duties of Great Britain has had the effect of increasing the consumption of raw sugar in the British islands 50 per cent. The duty on foreign brown sugar in England, which was 66s. per cwt. prior to July, 1846, has been but 14s. since July, 1851, and in 1854 the duties on raw and refined will be equalized. While the British demand for sugar was thus enhanced, the colonies produced less, and the extra demand from England fell on the markets of the world. In the same period, although the aggregate consumption of sugar on the continent increased, the demand for cane sugar was checked by the extended production of beet-root sugar, which has reached 150,000 tons per annum. Of this, in the German

Customs Union, the increase has been from 15,000 to 62,000 tons, forming now one-half of the whole consumption of sugar in the Zollverein. In France a great increase in the production of beet sugar took place under the protective policy of the government, which discriminated in its favor against the cane sugar of the colonies, until the growth became large, and then it reversed its policy, discriminating in favor of cane-sugar. Nevertheless, the course of the provisional government, in 1848, towards its colonies diminished the receipt of colonial cane-sugar in France from 120,000 to 60,000 tons. The product of Martinique and Guadeloupe has been as follows:

It would seem to be the case, however, that notwithstanding the diminished supply of cane-sugar from the British and French West Indies, that the growth of beet-sugar in Europe has so far supplanted its use as to more than meet the aggregate increased demand for consumption in both England and Europe, and to throw larger supplies of Cuban sugar upon the United States' markets, to compete with the swelling production from the Louisiana cane. The import of brown sugar into the United States down to June 30, 1847, according to official returns, was as follows:

POUNDS OF IMPORTED RAW BROWN SUGAR INTO THE UNITED STATES.

	Cuba	Brazil	West Indies	East Indies	Total
1837.....	40,965,998.....	3,287,401.....	49,166,140.....	26,996,532.....	120,416,071
1838.....	55,624,855.....	7,885,067.....	66,093,202.....	9,597,781.....	139,200,705
1839.....	70,286,903.....	9,848,738.....	86,681,537.....	15,783,149.....	182,540,327
1840.....	48,127,706.....	5,413,316.....	45,576,480.....	8,838,531.....	107,155,033
1841.....	90,364,397.....	9,070,626.....	60,838,901.....	5,659,259.....	165,963,083
1842.....	67,586,332.....	6,822,217.....	68,179,055.....	12,328,234.....	155,414,946
1843.....	31,628,319.....	1,915,115.....	31,475,613.....	4,515,284.....	69,434,331
1844.....	114,362,368.....	2,709,099.....	54,763,060.....	7,932,964.....	179,857,491
1845.....	51,699,108.....	6,258,288.....	46,571,976.....	6,532,720.....	111,967,404
1846.....	61,624,973.....	4,926,304.....	50,057,329.....	9,656,444.....	126,731,661
1847.....	169,274,024.....	6,896,447.....	45,366,660.....	3,642,895.....	226,683,261
1848.....	174,979,362.....	6,003,609.....	54,035,761.....	13,182,395.....	248,201,117
1849.....	179,754,020.....	9,516,004.....	56,710,138.....	7,835,323.....	253,815,495
1850.....	127,767,543.....	7,033,366.....	49,530,181.....	13,320,729.....	197,651,819
1851.....	275,327,497.....	14,557,699.....	62,883,757.....	10,768,908.....	364,537,861

Under the term of West Indies is included Porto Rico and some of the South American countries other than Brazil. It will at once be seen that the supply from Cuba, from being one-third only of the whole import in 1837, has gradually risen until it is become two-thirds of the whole importation of raw sugar into the Union. The supplies from Brazil fluctuate more in proportion to the European demand and prices than do those

from Cuba. The figures, however, embrace only the brown sugar. If we add the aggregate of white sugar in each year, and also the crops of Louisiana, we arrive at the supply of raw sugar in the United States for each fiscal year. The figures for the year 1843 are for nine months only. It was in that year that the date of the fiscal year was changed.

IMPORTS OF RAW SUGAR AND LOUISIANA CROPS.

	Import		Supply	
	White	Brown	N. O.	Raw Sugar
1837.....	15,723,748.....	120,416,071.....	70,000,000.....	306,139,819
1838.....	14,678,238.....	139,200,905.....	68,000,000.....	318,879,243
1839.....	12,690,946.....	182,640,327.....	170,000,000.....	265,231,273
1840.....	12,934,552.....	107,956,033.....	115,000,000.....	235,890,585
1841.....	18,233,579.....	165,963,083.....	57,000,000.....	271,197,662

IMPORTS OF RAW SUGAR AND LOUISIANA CROPS—continued.

	Import		Supply	
	White	Brown	N. O.	Raw Sugar
1842.....	16,464,990	155,414,946	90,000,000	261,879,236
1843.....	1,098,025	69,534,331	140,000,000	211,632,356
1844.....	4,731,516	179,867,491	100,000,000	284,589,007
1845.....	1,162,674	111,967,404	100,000,000	313,119,978
1846.....	1,043,836	126,731,661	187,000,000	314,775,497
1847.....	9,196,106	226,683,261	160,000,000	386,879,361
1848.....	6,007,008	248,201,117	240,000,000	494,208,125
1849.....	5,103,741	263,815,486	220,000,000	473,919,226
1850.....	19,997,312	197,651,819	247,923,000	465,572,231
1851.....	4,786,437	363,637,861	211,307,000	579,627,298

Such has been the annually increased supply of raw sugar. Since 1842, the trade has undergone a change in refining. Thus the tariff of 1833 charged a duty of $2\frac{1}{2}$ cents upon raw sugars, but in order to encourage refining, it allowed a drawback of five cents per pound on refined sugar exported. It is ascertained that 100 pounds, one-third white Havana and two-thirds brown, will yield $51\frac{3}{4}$ pounds refined. Hence refunding five

cents of the refined sugar was giving back a little more than the duty on the raw sugar. That is to say, 100 pounds raw sugar \$2 60 duty, and produced $51\frac{3}{4}$ pounds refined, on which the drawback was \$2 68 $\frac{3}{4}$; and further, as under the terms of the compromise act, the duty on the raw sugar underwent biennial reductions, while the drawback became a direct bounty, and the business was increased as follows:—

IMPORT AND EXPORT OF REFINED SUGAR.

	Foreign	Domestic	Total Export	Imports	Exc's exp.
1837.....	72,786	1,844,167	1,916,953	9,899	1,907,055
1838.....		2,610,649	2,610,649	4,556	2,606,093
1839.....	136,191	4,781,723	4,918,915	57,751	4,861,164
1840.....	74,674	10,741,648	10,816,822	1,682	10,814,640
1841.....	3,033	13,435,084	13,438,117	68,333	13,369,784
1842.....	1,320,181	3,430,346	4,750,527	1,985,319	2,765,208
1843.....	157,700	598,884	756,584	699,090	57,594
1844.....	1,679,410	1,671,187	3,350,517	2,215,517	1,185,000
1745.....	1,840,909	1,997,692	3,838,901	2,044,862	1,794,039
1846.....	910,263	4,128,512	5,038,775	253,379	4,785,396
1847.....	185,878	1,539,415	1,725,293	1,089,477	638,816
1848.....	489,220	3,370,773	3,817,993	2,121,628	1,696,365
1849.....	100	1,956,895	1,956,895	400,015	2,356,880
1850.....	286,078	2,786,022	3,072,100	796,217	2,275,883
1851.....	1,107,295	2,689,541	3,796,836	12,077,726	

The great increase in the import of refined sugar in 1851 was from Belgium and Holland, stimulated by the low prices of raw sugars there. Under the operation of the falling duty upon raw sugar and the unchanged rate of drawback, the export of refined sugars rose from 2,000,000 lbs. in 1837, to nearly 14,000,000 lbs in 1841. With the close of that fiscal year, the drawback was reduced from five cents to three cents, and after January, 1842, to two cents. The effect was the instant cessation of the trade,

making a difference of near 27,000,000 lbs. in the quantity of brown sugar re-exported in the shape of refined sugar. This was a very important item, and its effect upon the market was by no means properly estimated. We may now take a table of the whole export of sugar from the United States, that is, raw sugar of foreign and domestic origin, and of refined sugar equal to raw, at the rate of two pounds raw for one of refined, as follows:

TOTAL EXPORT OF RAW SUGAR, FOREIGN AND DOMESTIC, AND OF REFINED EQUAL TO RAW.

	Raw		Domestic refined equal to raw	Total export
	Foreign	Domestic		
1837.....	41,052,073	306,602	3,688,334	45,047,008
1838.....	11,624,324	408,802	5,221,398	17,254,524
1839.....	13,018,451	387,203	9,563,446	23,069,100
1840.....	18,872,344	769,903	21,483,396	41,125,648
1841.....	11,811,233	312,864	26,970,168	39,094,265
1842.....	11,577,589	166,533	6,860,692	18,604,814
1843.....	1,729,276	58,563	787,768	2,575,607
1844.....	2,795,622	187,118	3,342,214	6,324,954
1845.....	11,199,089	195,985	3,995,981	15,391,058
1846.....	19,347,414	109,295	8,259,024	27,715,733
1847.....	5,756,260	388,457	3,078,830	9,223,547
1848.....	12,677,790	135,006	6,757,556	19,570,352
1849.....	17,149,894	399,209	3,913,790	21,462,893
1850.....	13,866,987	458,839	5,772,044	20,097,870
1851.....	5,279,813	561,825	5,379,082	11,220,723

This table gives the whole annual export demand for raw sugar. If now we take the above table of supply, the difference will give the annual consumption of cane sugar in the Union :

Years	Supply	Exports	U. S. Consum.
1837.....	206,139,819	45,047,006	161,092,811
1838.....	218,879,243	17,254,524	201,624,719
1839.....	265,231,273	23,969,100	241,262,173
1840.....	235,890,585	41,125,648	194,764,937
1841.....	271,197,662	39,094,265	232,103,397
1842.....	261,879,236	18,604,814	243,274,422
1843.....	211,632,356	3,576,607	209,056,749
1844.....	284,589,007	6,324,954	278,264,053
1845.....	313,119,928	15,391,058	298,728,920
1846.....	314,775,497	27,715,733	287,059,764
1847.....	385,879,361	9,223,547	376,655,814
1848.....	494,208,125	19,570,352	474,637,773
1849.....	478,919,226	21,462,893	453,456,333
1850.....	465,572,231	20,097,870	445,474,361
1851.....	579,627,298	11,220,723	568,406,575

In these figures we have taken no account of maple sugar, because, although that article is a valuable product in the new states, it does not conflict with the cane sugars where the latter are introduced through the operation of the public works, the returns of which all show an increasing market for the cane sugar, as the districts through which they run become more settled. The prominent fact in the above table is, that while Louisiana and Cuba afforded equal supplies for the consumption of the Union, the former has far outrun Cuba, notwithstanding that the latter has become so much more dependent upon the United States for a market.

SUGAR—CULTURE AND MANUFACTURE OF—DESCRIBING AND COMPARING

THE DIFFERENT SYSTEMS PURSUED IN THE EAST AND WEST INDIES, THE UNITED STATES, ETC., AND THE RELATIVE EXPENSES AND ADVANTAGES ATTENDANT UPON EACH : BEING THE RESULT OF SIXTEEN YEARS' EXPERIENCE AS A SUGAR PLANTER IN THOSE COUNTRIES.—The great English work of Wray has been sold at a price that puts it out of the reach of our planters, though a most invaluable guide it would prove to them. Scarcely a dozen copies have been taken in Louisiana. We yielded to the frequent solicitations of many friends, and re-published it in several numbers or the Review, in short parts and very small type. It will be interesting in Carolina, Georgia, Florida, Alabama and Texas, as well as in Louisiana.—Ep.

*History and Varieties of Sugar-Cane.**—It is a matter of considerable doubt whether the sugar-cane plant is a native of America or not. Strong opinions have been given as to the improbability of its being so ; whilst, on the other hand, many old writers assert with great confidence the fact. And, indeed,

viewing these conflicting accounts dispassionately, we must allow that, as the plant was found growing in its utmost luxuriance throughout the islands of the Pacific Ocean by our earliest navigators, it requires no great stretch of imagination to believe that it was also growing on the great continents of America long before it was brought there by the Portuguese and Spaniards. It would not be difficult to adduce many arguments in support of this belief : but I am well aware that such a discussion here would be deemed tedious and irrelevant.

The Chinese assert that sugar has been made from the cane, in China, for upwards of 3,000 years ; and, without disputing with "the flowery nation" for a few hundred years, more or less, we will at once concede to them their undeniable claim to very great antiquity as sugar manufacturers. But I cannot divest myself of the belief that INDIA—not China—is in reality the country from which the sugar-cane FIRST emanated. Whether such be indeed the case or not, we have now no possible means of deciding ; and, moreover, it is a question which no way interests the plain matter-of-fact planter ; suffice it, therefore, to say, that it is now found growing in almost every tropical country under the sun.

Varieties known and their qualities.—From what I have already seen, I do not hesitate to say, that an endeavor to describe all the different varieties of cane that are known, would be a wearisome, if not a hopeless, task, from which, it is clear to my mind, that no adequate benefit can be derived. Therefore, I will confine myself to a mention of those which have been more prominently brought before me ; and amongst them, I think, almost every variety known to the generality of my readers will be found noticed.

In Jamaica, the varieties common are—the Bourbon, the Otaheite, and Batavian canes.

In Bengal, the yellow and purple ribbon-canes of Otaheite ; the Bourbon, or Mauritius ; the Singapore (Tibboo Leeut*) ; the large purple cane of Java ; the red cane of Assam ; the common, small, hard cane of China ; and some ten different kinds of native cane, varying in thickness from one inch and a half to half an inch in diameter ; the very smallest resembling little riding switches.

In the Straits Settlements of Penang and Province Wellesley, Malacca, and Singapore, the varieties are—the Salangore cane ; or, as the Malays term it, Tibboo Capper ; the Tibboo Leeut ; the Tibboo Teeloor, or egg cane ; the Tibboo Etam, or black cane ; the Tibboo

* For the other parts see De Bow's Review, vol. xiii., which will be vol. iv. of Industrial Resources, and appear in December, 1852.

* Tibboo, or Tubboo, is the Malay name for sugar cane.

Meerah, or red cane; the Tibboo Batavee, or Batavia cane; the Tibboo China, or small China cane; and many others not requiring description.

To give a distinct account of the foregoing canes, I will take them as I have named them, each in succession.

The Bourbon cane.—There does not appear to me to exist any very satisfactory account of the origin of this variety; the opinion generally received is, that it was introduced into the West Indies from the island of *Bourbon*, but came originally from the coast of Malabar, where it was found growing spontaneously. When first discovered, it is stated to have been a small-sized, but soft and juicy cane, which was so much affected by the change of climate, soil, and the cultivation it received in Bourbon, that it increased wonderfully in size and richness of juice; so that it was cultivated in preference to the old species, which at length it entirely superseded throughout the island.

From my own experience in Jamaica, I can pronounce it a most valuable cane; but I entertain a strong suspicion that it is in reality no other than the Tibboo Leeut of Singapore, sometimes called the Otaheite cane,) somewhat altered by change of soil and climate. I have bestowed considerable attention upon it, and have carefully marked the Tibboo Leeut, growing on entirely different soils, in different situations, and under widely different circumstances, and I can come to no other conclusion than that they are identical.

The Otaheite canes are two—the yellow and straw-colored, and the purple-striped or ribbon cane.

The former and the Bourbon are so much alike in all respects, and have become so intermixed on West India estates, that it is a matter of great difficulty to distinguish between them; indeed, I have long been of opinion that they are the same variety of cane. If we remember that the Bourbon was taken to that island, then to Martinique, and afterwards spread in course of time throughout the West India islands, that the Otaheite was taken direct from that island to the West Indies, and direct to Calcutta and the Straits Settlements; that the Tibboo Leeut came from Manilla (evidently from Otaheite originally) to the Straits of Malacca; if we consider these facts, we shall find no cause for astonishment at the very slight difference that exists between them; on the contrary, we must be much struck at the extreme similitude, which even such extraordinary changes have failed to destroy. But let the *three* be collected, and then planted out, under precisely similar circumstances, and I am quite satisfied no man can distinguish the one from the other: at all events, I have no hesitation in owning that I never could—the

which has served to convince me that they all came originally from Otaheite.

As I consider them to be the same variety, and as one description serves for the whole, I will therefore treat of them accordingly. With the advantages of a good soil and favorable season, plants of the first year's growth often attain the height of twelve or fourteen feet, measuring six inches in circumference, and with joints eight or nine inches apart. I do not mean to imply that the average size of a field, or of fields, is so large, but that canes may be picked out from amongst them fully as large as that. Such plant canes commonly yield (in Jamaica, Bengal, and the Straits) two and a half tons, and not unfrequently three tons, of marketable sugar per acre. Such an amount of produce per acre is a very common and well-known occurrence; but the general calculation among planters is, however, *two tons of dry sugar from each acre* of "plant canes;" that is, canes of the first year's growth. I can see no difference in the yield of this cane in either Indies; for, in good land, the return is generally as above stated.

Planted at proper seasons, as will be treated of hereafter, they often attain maturity in ten months, and very rarely exceed twelve. Under certain circumstances, it may be expedient to allow them even fourteen months, as in excessively rich land, or a wet season; but, of course, these circumstances come more particularly under another head, which will be fully discussed in its proper place.

These canes require a generous soil, careful fencing, and attentive management. Many soils which suit other varieties, are unfit for the proper development of these; whilst it is generally remarked, that they are more sensible of the injuries committed by the trespassing of cattle, sheep, &c., during their early growth than other descriptions. The foliage of the Otaheite is of a pale green, leaves broad and drooping much; and the plant, on arriving at maturity, frequently arrows, or flowers; which renders it, when in extensive fields, exceedingly graceful and ornamental in appearance.

"The purple-striped Otaheite" cane is very much like the ribbon cane of Batavia in appearance: but the former has broad purple stripes, on a greenish yellow ground, whereas the latter is of a blood-red, on a transparent straw-colored ground. It is often called "the Otaheite ribbon cane," in contradistinction to "the ribbon cane of Batavia." Its foliage is of a much darker color than that of the yellow variety, whilst its leaves droop much less. It is a hardy and estimable description of cane, of large size, soft, juicy, and sweet; and yields sugar in equal quantities, though of a rather dark quality.

The Batavian canes, with which I am ac-

quainted, are of four descriptions, viz. : the yellow violet ; the purple violet, or Java cane ; the "transparent," or ribbon cane ; and the Tibboo Batavee, or Batavian cane, of the Straits.

"The yellow violet," so denominated in the West Indies, differs from the Bourbon in being smaller, less juicy, considerably harder, of slower growth, and of a foliage much darker and more erect. When ripe, it is usually of a straw color, its skin or rind is thick, and the pith hard ; but its juice is rich and abundant. The yellow violet does not require so rich a soil as the Otaheite, but contents itself with that of an inferior description : this renders it of much importance in planting out large tracts of land, some portions of which may be too poor for its superiors. In Jamaica, it is usual in such places to plant the violet ; thus we often see large patches of it flourishing in the midst of a field of the Bourbon. To an unpractised observer, this sight would cause much speculation ; as its dark green foliage presents a striking contrast to the pale green of its immediate neighbors, and might lead to the conclusion that those dark green patches were occasioned by some greater degree of fertility and moisture existing in those parts ; whereas the contrary is, in fact, the case. The sugar manufactured from this cane is of a very fine quality ; but considerably less in quantity than the Bourbon. A very common custom of the Jamaica planter is, to mix the yellow violet with Bourbon plant canes, according to proportion, for the purpose of rectifying the juice of the latter, so that burning and other such vexatious occurrences might not arise in boiling.

"The purple violet," or large black cane of Java, is fully as thick as the Otaheite, with joints varying from three to seven inches apart. In height, it is usually about eight or ten feet, with leaves of a lighter green than the "yellow violet." The very upper joints sometimes exhibit faint streaks, becoming imperceptible in the lower joints, which are of the darkest purple color. Very frequently a white resinous film is seen encrusted on the joints of this cane, which, over the rich purple, presents much the same appearance as that peculiar to the finest bloom raisins. Sometimes this resinous crust lies so thick, that the purple of the cane itself is in some joints scarcely perceptible. When in perfection, it yields a very sweet and rich juice. Being very hard, it is difficult to grind, and affords a comparatively small quantity of juice, which is sometimes rather troublesome, from the resinous (or gummy) and coloring matter which it contains. It is a very hardy cane, thriving well in poor dry soils ; and in Jamaica it is often planted in the outer rows of the cane-fields, to stand the brunt of trespassing cattle, which, browsing along the roads, or breaking

through fences, tear and trample down the canes. To other descriptions of cane, these ravages would be very serious indeed ; but fortunately, the purple violet is so hardy, that it quickly recovers from such injuries, and springs up again with astonishing rapidity. It was introduced into the West Indies about the same time as the Bourbon, and is still much cultivated. In the Straits, the Malays term it Tibboo Etam, (*Etam*, black ; *Tibboo*, cane,) or black cane, and cultivate it much around their houses, for eating.

"The transparent," or ribbon cane, is much smaller in size than the Otaheite ribbon cane ; is of a bright transparent yellow, with a number of blood-red streaks or stripes running the whole length of the stalk, and varying in breadth from a quarter to a full inch ; and being very clear withal in its tints, it presents a very pretty appearance. Its leaves are of a green, similar to that of the yellow violet, but more erect. It grows from six to ten feet high, with joints from four to eight inches apart, and four inches in circumference.

"The transparent" is generally planted in light, sandy soils, where no other cane will thrive ; sometimes it is planted promiscuously with the yellow violet. Although its rind is thick, and general texture hard, yet it yields a good quantity of juice of excellent quality, which is easily converted into fine fair sugar. Planters often grind this cane, also, with Bourbon plants, for the same reason as applies to the yellow violet.

"The Tibboo Batavee," or Batavian cane, is a cane common in the Straits of Malacca, where it is cultivated by the Malays. In appearance it is much like the yellow violet, except in the peculiarity of its color, which is rather greenish, with a pink shade, in parts ; in some of the low joints this pink color is very bright and pretty, whilst in the *upper*, it is more faint and delicate ; the joints are seldom more than three to six inches apart. In height, size, and foliage, it closely resembles the yellow violet ; although it differs from it, in being much softer, more juicy, and less hardy in habit. In a rich soil it is prolific, and ratoons well,—its juice is rich, clarifies easily, and gives a fine sugar : but on the whole, it is inferior to the Otaheite variety, yet requires an equally rich soil.

A description of cane was sent from the Mauritius to Province Wellesley, Penang, under the general name of "the Mauritius cane," and I had several opportunities of seeing it growing, when but young. It is very different from other descriptions of cane I have seen from the Mauritius, and it struck me as being an East Indian cane improved by cultivation.

I have seen only three varieties of large canes on the Continent of India, which are supposed to be peculiar to the country : one

is the large red cane of Assam, specimens of which were kindly sent me by Dr. Keith Scott, the Hon. East India Company's civil surgeon, at Gowhatty in Assam. This gentleman had established a sugar estate at Gowhatty, and made sugar; so that he had experience of the right sort, which lends to his opinion considerable weight. In writing of these canes, he says:—"This morning I dispatched, by the Assam Company's tea boat, a couple of red sugar canes for you, requesting the Honorary Secretary of the Company to forward them to you. They are of a description you may not have met with before, very juicy and sweet; the sugar produced from them is of an exceedingly fine grain and good color: they are, moreover, strong in growth, and much less apt to fall over than the Otaheite, to which they are fully equal in size, as well as in quantity and quality of juice. I am also preparing for you some 'flowers' of this cane, in different stages, which I will dispatch, when quite dried. I have now (January) canes in flower, which were planted last May!"

So that the canes in flower were only eight months old; consequently they could be cut and manufactured in ten months from the day of being planted. I am sorry to say that two months elapsed before I received these fine canes, by which time they were dead and withered up.

Some time afterwards, Dr. Scott again sent me two boxes, with some pieces of the same cane, *growing*; but unfortunately they did not survive the long and roundabout way by which, through unforeseen occurrences they were sent.

I subsequently had a long and interesting conversation with my kind and excellent friend, when he repeated all he had before written, and added much more, in praise of this red cane,—from all which I have been led to form a very high opinion of it.

In Lower Bengal, (near Calcutta,) and in the Straits of Malacca, a large red cane abounds, which bears so exact a resemblance to Dr. Scott's Assam cane, that I conceive it to be the same identical variety, somewhat improved in the rich and fertile soil of Assam. It must be remembered that I do not speak positively, as I never had an opportunity of seeing the foliage of the Assam cane.

The red cane of Bengal is a large and fine cane, much used about Calcutta for sugar manufacture; and I have had brought to me by natives, sugar made from it by themselves, (in their own rough and primitive way,) which exhibited a grain of immense size, strength and brilliancy. They, however, say that it is not a good cane for sugar-making, as the juice is very dirty, and the sugar always dark colored. These assertions, however, have no weight with me; for I can

easily detect the cause, and know that it can be avoided.

In the first place, the Bengalee cultivator has a plan of tying up the canes of each root closely together, with bands made with twisted cane leaves; so that, as they grow, the resinous substance exuding from the rind, accumulates along the whole length of each cane, turns black, and together with the excrement of numerous insects, (which harbor and breed in these snug retreats,) make the cane-stalk quite filthy: add to this, the exclusion of air and light, which are necessary to the perfect elaboration of the juices, and I think we need not be surprised at the juice being dirty and difficult to clarify. In the Straits of Malacca I have seen them as clean as other canes, tall, erect and vigorous: but the Chinese say that in grinding they give out a considerable quantity of coloring matter,—which, by the way, would be of little consequence, did they clarify their cane-juice properly, which they do not.

I still, therefore, incline to the opinion, that they are a fine, and under certain circumstances, valuable description of cane. The Malay name is "*Tibboo merah*"—red cane.

The next large canes are the black and the yellow Nepaul canes, which I obtained from the kingdom of Nepaul—four plants of each, growing in boxes. They arrived safely, after a series of adventures, in a fine, healthy condition, giving promise of becoming fine canes, but a long and dangerous illness obliged me to go away for change of air, during which time they were destroyed by goats. They were, however, large-sized and fine-looking canes, fully equal in appearance to the Assam cane—and my messengers, together with the Nepaulese (in my employ) gave them the very highest character. I regret to say that I never had another opportunity of seeing those varieties again.

As to the small-sized canes cultivated in India, they are so numerous that I cannot attempt a description of them: moreover, they are, in comparison with those which have been, and are to be, noticed, so very wretched, that did I not know them to be cultivated, by the prejudiced native, to an immense extent, I should deem them unworthy of being mentioned in any way; as it is, I shall have to treat at large of them when I come to explain the cultivation of the cane in India.

"The *China cane*" was received into the Botanic Garden of Calcutta in 1796, direct from China; having been specially ordered by the Bengal government, at the suggestion of Dr. Roxburgh, who considered it a new species, and named it *Saccharum Sinense*, or Chinese sugar-cane. Writing in 1799, Dr. Roxburgh says, "It has been cultivated with the utmost possible success; many HUNDRED THOUSANDS have been distributed over the

country amongst the cultivators of that article." Dr. Royle* writes, "it possessed the advantage of being so hard and solid as to resist the forceps of the white ants and the teeth of the jackal—two great enemies to the East India sugar plantations. It was found, however, too difficult to express the juice with the Bengal sugar mill; but Dr. Roxburgh was of opinion that this might be obviated by introducing the simple, yet powerful, mill of the coast of Coromandel. He further describes the cane as bearing drought much better than the sorts in general cultivation; producing, moreover, a profitable crop, even to the third year; while the common cane of India must be annually renewed. According to the report of Mr. Touchet, the commercial resident at Radnagore, and of Mr. R. Carden, superintendent of the Hon. Company's Sugar Plantation Farm at Mirzapore Culna, "It not only resists the ravages of the white ant and jackal, but yields about double the produce of the common Bengal cane."

Independently of this testimony, which I know to be most correct, I can state my own experience of them; and I cannot better do so than by giving the account, as I wrote it at the time, (about four years and a half ago.) The Chinese cane was supplied me from the Society's Garden, Calcutta, and took upwards of two months coming up by boat; yet it was perfectly fresh and green on its arrival, whilst the other descriptions of cane had all died, or withered away. From the three hundred canes sent me, by cutting them up into pieces of two joints each, I obtained sufficient to plant out a small patch of ground—which this season yielded me so many canes, that by cutting them up as before I was enabled to plant out about SIX BEGAHS (four acres) of land with them, besides supplying my neighbors with a few. In its nature it is extremely hardy and prolific; for during the last hot season, it remained uninjured in every respect, whilst the others were all either burnt up, or eaten out of the ground by the white ants. As the rains came on, the China canes sprang up wonderfully, many roots having no less than THIRTY shoots; which, by September, had become fine canes, about twelve feet in height, three inches in circumference, and with joints from six to eight inches apart. These were cut in October, and planted out; yet although we had a tolerably severe winter, the cold appeared to have little or no effect in checking their growth; whereas NATIVE CANES, planted at the same time, were ENTIRELY kept back. For their extreme hardness in withstanding heat and cold, white ants, jackals, &c., &c., I myself can vouch; and, moreover, I con-

sider that it is a variety of cane which deserves the attention of the East India sugar planter. Such was my opinion nearly five years ago, and I have had every reason, since that time, to be satisfied of its correctness.

A gentleman in Bengal, largely connected with sugar matters, writing to me on this subject, says, "You may remember that I wrote to you some months ago soliciting information and advice regarding the "*China cane*," which you gave so good an account of in the *Agr. Hor. Society's Journal*; I have much pleasure in now giving you the result of my experiment.

"As you advised, I wrote to the Society for five hundred canes, which arrived quite fresh. I then cut them up, allowing ONE JOINT to each piece, and planting them in lines, four feet asunder each way, delivered them up to the same chances as my Otaheite and native canes were exposed to. The result has been beyond my utmost hopes; and, this too, after a season of unusual severity, which has grievously affected my native cane; and as to my Otaheite, what with the hot winds, the white ants, the long continued wet weather, and the detestable jackals, I saved but a very few; whilst nothing seemed to injure or affect the *China cane*. Did you ever know the Otaheite cane-sprouts to be devoured by caterpillars? I forgot to put those depredators in the list of enemies to the Otaheite plant; although they certainly are very formidable ones, as the partial destruction of many of my plants testified. They attacked the plant when only a few inches above the ground, from which many never recovered.

"I understand that INDIGO PLANTS are often quite destroyed in the same way, so perhaps it may not happen again for some years. This hope determines me in trying the Otaheite cane once more; when, if it does not succeed, I shall keep entirely to the China cane: which, by the by, I am now extending, as far as my plants will allow me. I am disgusted with the native cane, and shall soon put them aside altogether."

I think these accounts of the China cane are sufficient to establish the fact of its being a variety well suited to India; although I need not say that it is immeasurably inferior to the Otaheite, wherever that cane can be cultivated successfully. It was introduced into India in 1796, and in 1799 was spreading rapidly all over the country. It is now very common throughout Bengal, although the natives think it a native cane, from its having been so long amongst them. They have given it a native name, which I quite forget. I met it in several places, and recognized it at once; yet I never met but one native who knew it to be otherwise than a native cane. Certainly, its neglected cultivation during fifty odd years in India, has caused it to de-

* See Royle on the Productive Resources of India, p. 92.

generate very much ; hence my advise to all persons desirous of trying it, "Send to the Society's Garden, in Calcutta, for it."

It is a very small-sized cane, being rarely more than one inch, or one and a quarter inch in diameter ; but it is sweet, and makes fine, fair sugar. The Chinese assert that it is better adapted for sugar-candy making than any other cane.

In the Straits Settlements of Penang and Province Wellesley, Singapore and Malacca, the principal canes are eight in number. Of these, first and foremost, is "the SALANGORE CANE," by the Malays of Province Wellesley termed "tibboo bittong beraboo" (the powdery bark-cane), but by the Malays of Singapore and Malacca, it is named "tibboo cappor" (the chalk-cane), from its having sometimes a considerable quantity of a white resinous substance on the stalk. *This is the*

INVEST description of cane in the Straits Settlements, and PERHAPS IN THE WHOLE WORLD. In Province Wellesley it is universally cultivated on all the estates, and is only known to those planters as the China-cane, from the simple circumstance of the Chinese cultivators in the province having been in the habit of cultivating it for years, before any European embarked in such speculations in those parts.

I have cut as many as five of the larger canes from one stool ; each cane from ten to fifteen feet long, without leaves, and seven and a half inches in circumference, (round the lower joints) : each cane weighed from seventeen to twenty-five pounds. That of twenty-five pounds weight, I kept some weeks in my house, and numbers of people saw it ; it was thirteen and a half feet long, and two and a half inches in diameter, yet it was not by any means so large a cane as I have seen. The place where I found it growing was a newly-cleared piece of jungle-land, whereon a Malay had "*squatted*," built a house, planted rice, and some three acres of sugar-cane around it.

The cane plants had been stuck in the ground without regard to regularity, and had received no kind of attention, yet I counted twenty-five canes of immense size, growing from many of the stools. This may be considered a solitary instance, but it is by no means the case, as in any fair jungle land this cane attains an extraordinary size and height ; and I dare to affirm, that on any estate in Province Wellesley, canes can be found, in the cane pieces, which will weigh fifteen pounds at least. It is very evident that the average size, on an estate of five hundred acres, is much under that ; and indeed too large a cane is both inconvenient and undesirable for sugar manufacture.

The Salangore cane is remarkable for the quantity of "*cane-itch*" (so termed in the West Indies), which is found on that portion of the leaf attached to the cane-stalk. Some-

times touching a growing cane incautiously, I have had my hand covered with it, which penetrating deep into the flesh, caused great irritation and inflammation. The leaves are very broad, and deeply serrated at the edges, with a considerable droop ; they are some shades darker in color than the Otahöheite, and have so good a hold on the stalk, as very seldom to fall off, when dry, as some canes do, but require to be taken off by hand. They ratoon better than any canes in the straits ; and I have known them to yield forty piculs (a picul is 133½ pounds) of granulated, but undrained sugar, per orlong (an orlong is one acre and a third), as third ratoons. From what I have seen, I am disposed to think that in the West Indies, Mauritius and India, they would be found to ratoon better than any other cane.

As "*plant-caness*," I have known them to yield, on an average of some acres, sixty-five piculs of granulated sugar per orlong, or 6,500 pounds per acre ; and I have frequently been informed by a French gentleman in Province Wellesley, that he has in some cases obtained as much as 7,200 pounds of sugar per acre (undrained), from which he has secured 5,800 pounds of shipping sugar, well dried in the sun.

For my own part, I have always reckoned as an average, 3,600 pounds of dry sugar to the acre, as the return this cane will give, on anything like good land, in the Straits, according to the present imperfect mode of expression and manufacture ; but considering the surpassing richness of land in the West India islands, Demerara and Mauritius, I should not be in any way surprised to find that it would there give even three tons an acre.

The Salangore cane grows firm and strong ; stands upright much better than the Otahöheite ; gives juice most abundantly, which is sweet and easy of clarification, boils well, and produces a very fine, fair sugar, of a bold and sparkling grain. On the whole, I like this cane better than any other, and would like to have it tried in the West Indies and Mauritius.

It appears to me to be peculiar to the Malayan peninsula, and is said to have abounded more particularly in the Rajah of Salangore's territory (between Penang and Malacca.) At present, being cultivated on some fifteen or twenty large estates in Province Wellesley, Penang, it is of course obtainable in that settlement in large quantities.

The "*Tibboo leet*" (clay-cane), sometimes called the Otahöheite, I have already described as belonging to that variety.

The "*Tibboo teeloor*" (or egg-cane) has long been deemed to be the Otahöheite cane by the planters of Province Wellesley, but quite erroneously. It is evidently the cane described by Cook and other navigators, as peculiar to the island of Tanne, one of the New Hebrides. (Quoting from memory,) he says : "The su-

gar-canes of this island, we remarked, were much superior to those of Otaheite, being softer, more juicy, cleaner, of a paler, brighter yellow, and altogether much finer and more luxuriant; but this superiority in the sugar-cane is more than counterbalanced by the great inferiority of the bread-fruit, &c., produced in this island, compared to that of Otaheite."

I have seen many accounts of the same tendency, but I had an opportunity of satisfying myself more completely by meeting in Singapore the master of a ship who had several times visited those islands, and was altogether a very sensible and observant man. He said that himself and his officers had taken particular notice of the extremely clean and bright appearance of the *Tannæ* cane, in comparison with that of Otaheite; and that on his arrival at Singapore, his Dabash (a native who supplies the shipping while in harbor), had come off to the ship with a basket of fruit, amongst which were some pieces of sugar-cane, which they all immediately recognized as the cane of *Tannæ*, but which the Dabash told them was called in Singapore the egg-cane. He further identified the "tibboo leeut" as the genuine Otaheite cane, and said that every man on board his ship could go into any Chinaman's garden and point out to me, without hesitation, the two different canes! I also discovered that this variety was introduced into Manilla many years ago, and from thence found its way to Singapore, where it is extensively cultivated by the Chinese for sale in the markets, as it is in great request for eating. In size, it is fully equal to the Otaheite, whilst it is so exceedingly clean and beautiful, that it surpasses all other canes in appearance.

It has many very singular peculiarities, which no one can overlook or forget. Apart from its extreme cleanness and pretty appearance, it is remarkable for the almost entire absence of *cane-itch*—smoothness of leaf; the curious manner in which it bulges out between the joints (which has obtained for it the name of the egg-cane, from the Malays, who say that it bulges out in the form of an egg); the peculiarity of shedding its leaves as they become dry; its delicate structure, which causes it to fall over, and very frequently to break short off; and the large size of the eyes or buds (along the stalk), which are unusually developed, and more readily burst forth than in any other cane I know.

It is very prolific, and with the exception of the China cane, I know no other that can be so quickly propagated, as every eye shoots forth most vigorously, and each stool has generally from five to fifteen canes growing from it.

It produces as much (if not more) juice, of rich quality, as any cane growing—which

can be converted into fine, fair sugar, of a good, strong, sparkling grain. But with so many points to recommend it, still there are, undeniably, some very serious, and I fear fatal objections to it, as a cane for the sugar-planter. Its tender nature, liability to fall over, break, and thereby be entirely destroyed, could only be obviated by its being planted, perhaps, on lands securely sheltered from wind, and which also are neither too damp nor too rich.

I have often seen such places: for instance, what we term in Jamaica *bottoms*, or land lying between hills, which bottoms are generally sufficiently rich for this description of cane, without being too much so. But many places could, no doubt, be found admirably suited, where it would be well protected, and yet have abundance of sun, which it much requires; otherwise, its juice is liable to become watery and mucilaginous; whereas, on the contrary, if it has a fair soil and abundance of sunshine, no juice can be cleaner, and none more rich in saccharine matter.

Some experiments are now going on with this cane on two estates, one of which has fifty acres growing, which will soon be ready for the mill. As far as they have yet been tried, they have, notwithstanding their falling and breaking, yielded very fair returns; but the Chinese contracting cultivators do not like them.

I have already described the Batavia, China, red, and one black cane, found in the Straits, and have consequently only one more notice. This too is called "Tibboo etam," but also has an affix, distinctive of its particular character. Thus the Malays term it "Tibboo etam, obat," or "black medicine cane," from an idea that in certain diseases it is a very sovereign panacea. What these highly esteemed properties are, I have altogether forgotten; but these plants are frequently found growing in the gardens of Malays, that they may be found in case of need. It is a small, but clean and pretty cane, of a rich purple color, which color it imparts to the hands and lips of those who eat of it; I was surprised to see how it stained our hands and faces, having never seen such a thing before. One other great peculiarity is the beautiful tint of the leaves, which in some (very young) is of a delicate pink, gradually darkening (in those older) to a fine purple, mingling harmoniously with the green ground of the leaves, and altogether forming a most uncommon and highly pleasing foliage.

From what has been said, it must be evident that the Otaheite and Salangore varieties are the two most valuable canes we know of. It will also be seen that there are, nevertheless, others which, in certain localities, and under peculiar circumstances, become of very great importance, and highly deserving of attention. All this will be rendered more striking as I proceed: I shall therefore only

add, that the judicious selection of a variety of cane for planting is of immense importance, as it is not more expensive or troublesome to cultivate a superior cane, which will give large and remunerating returns, than it is to cultivate an inferior kind, which will lead only to disappointment and loss. Nor do I think that any estate should have only one description of cane. It is advisable always to have two, or even three, one of which might be cultivated generally.

TEXAS.—CLIMATE, RIVERS, LANDS, PRODUCTIONS, ANIMALS, MINERALS, POPULATION, GOVERNMENT, EMIGRATION, ETC., ETC.—Boundaries.—Few persons abroad are aware of the magnitude and attractions of this beautiful country. Texas has a territory of nearly 400,000 square miles, equal in extent to the whole of France and Spain together, comprising an area of 300,000,000 acres. It lies between 26 and 36° north latitude, and 93° 30' and 110° west longitude. Its greatest length is about 700 miles north and south, and 400 from east to west. It is bounded by Red River and Arkansas on the north, and the Rio Grande and New-Mexico on the west. It comprises a territory five times as large as New-England, and is nearly equal to the whole of the southern states, all of which contain but 370,000 square miles. Allowing, then, 280 persons to the square mile, the same as in England, it would sustain in round numbers a population of 100,000,000.

Face of the Country.—Texas may be divided into three districts or regions of country, each of which, in many respects, is entirely different. There are the level, the undulating, and the mountainous or hilly, or the lower, middle, and upper districts; or, as it is more convenient, divided into Eastern, Middle, and Western Texas. The eastern extends from the Sabine to the Trinity, the middle from the Trinity to the Colorado, and the western from the Colorado to the Rio Grande del Norte.

The level region occupies the entire coast, extending from 30 to 60 miles into the interior. The undulating succeeds this, and embraces the whole of the interior and the north, and reaches westward to the mountainous tract, which is distant 150 to 200 miles from the boundaries of the level lands. The alluvial lands of the several rivers which make into the Gulf are from 3 to 20 miles in breadth, and are heavily timbered with live oak, red, black, and white, and other species of oak; with ash, cedar, pecan, elm, hickory, mulberry, and all the other varieties of forest trees and growth common in the rich alluvions of the Mississippi. The cane brakes are of immense extent in the low country, and on the Caney Creek may be seen seventy miles long, and from one to three miles wide. Here may be grown cotton, sugar, rice, &c.

In the second division are the high, rolling,

verdant prairies, the narrow, wooded bottoms, the beautiful islands of timber, the quick-running streams, the cool, refreshing springs, and the healthful clime of Texas. There the soil, a little broken, is not inferior to that of the alluvial country below, is more easily worked, the products are greater and more varied, and, though not so convenient to a foreign market, will have a market at home. Here is to be the most densely populated part of Texas, if not of America. In this region the planter may raise all the cotton, rice, and tobacco, he can save, and the corn and grain he requires, and stock to any extent, without labor, and almost without care.

The table-lands are yet the home of the hunter and the range of the buffalo. Little is known of them, but they are represented by travelers to rival the table-lands of Mexico, to be rich in soil and climate, to be clothed in constant verdure, beautifully variegated in surface, and watered by streams as clear as crystal—to be, in fine, a perfect paradise.

Of the northern portion of Texas still less is known than of the table-lands. This region is said to be intersected by many streams of water-power, and to be rich in the precious metals.

Climate.—All who have visited Texas concur in ascribing to it the most delightful temperature in the world. Though possessing a climate varying, according to local situation, from tropical to temperate, it is generally remarkably pleasant and salubrious. The average range of the thermometer during the summer season is about 80°, and refreshing breezes from the south blow almost without interruption. During winter ice is seldom seen except in the northern parts of the state. From March to November but little rain falls, and the power of the sun is such as to exhale that little promptly. The southerly winds are very invigorating, and one seldom takes cold, however heated, by exposure to their influence. In November the strong northers set in. In the months of December and January, the cold north winds sweep down the plains with nearly as much regularity as the southeast wind in summer, being occasionally interrupted by that wind chiefly on the full and change of the moon. These periodical winds, doubtless, tend greatly to purify the atmosphere, and contribute much to give the climate of Texas a blandness which is rarely enjoyed, and a salubrity which is looked for in vain in the low alluvial country of the southern United States. The climate, indeed, is modified by so many favorable circumstances as to possess all the genial influences of Louisiana, while it escapes its attendant evils. In addition to the invigorating sea-breeze and the freeness from marsh effluvia which this enjoys, there is another advantage which contributes, perhaps, still more effectually to the preservation of the

health of the emigrant, that he can locate immediately upon the rich, open prairies, and realize a plenteous crop, without exposure to those "clearings" which prove so deleterious to the western farmer in his acclimation to a "fever-and-ague bottom."

Away from the river bottoms, which are frequently overflowed, and the vicinity of forests, you escape the fevers to which such regions are sometimes exposed, and enjoy uninterrupted and vigorous health.

The forests of Texas are generally free from underwood, and there are few miasmatic marshes or stagnant pools to give rise to epidemics, or occasion any fatal disease.

Rivers and Lakes.—No part of the extensive coast of the Gulf of Mexico presents a greater number of commanding harbors, bays and inlets, than that of Texas. The interior, intersected by numerous magnificent and navigable streams, in close vicinity to the great western tributaries of the Mississippi, and holding easy communication with the mighty "father of rivers" himself, furnishes a commercial position very desirable, and seldom surpassed.

Red River may be considered in part as belonging to Texas. The vast region west of the mountains in which it rises, and through which it rolls its turbid waters, has been yet scarcely explored; but it is known to be of great fertility and of surpassing beauty. In this region has the Texan emigrant reared his cottage, and planted his cotton, and his corn, and his wheat, which are borne along the current of Red River to the great mart of the southwest. The chief rivers, those which are more or less navigable for steamboats, are the Sabine, or Neches, Trinity, Brazos, Colorado, Guadalupe, San Antonio, and the Rio Grande. Besides these, there are others of less note and magnitude, though navigable to a considerable extent: the Angelina, San Jacinto, Buffalo Bayou, Oyster and Chocolate Bayou, San Bernard, Caney, Navidad, La Baca and Nueces.

There are no lakes of any importance to be found in this country. A few small ones near the sources of the Guadalupe, and on some of the tributaries of Red River and the Trinity, are all that are worthy of the name, and they are inconsiderable. To a country so well watered, intersected by rivers so numerous and important, and offering such valuable facilities for canal communication, they would be useless. Indeed, with but very little expense, its vast water-courses might be united in one great navigable chain, which would render the transportation of produce from any section of this wide-spread territory to a commercial emporium at any point on the coast, a matter of the utmost ease, and at a trifling cost.

Prairies and Meadows.—Texas, in general, is a prairie country, having all the streams skirted by timber. The sublime and beautiful are both united in her vast prairies—

sublime in extent, and beautiful in prospect. One may travel for miles, and even leagues, over a continuous plain, with nothing to interrupt the utmost stretch of vision upon the "living green," save the beautiful groves and "islands of timber" which are here and there interspersed, and flowers of every variety, hue and fragrance, and herds of cattle and deer—delighting the eye with the view of splendid lawns and magnificent parks tastefully laid out by the hand of nature, and presenting all the order and taste of civilization. Nothing in nature can surpass the beauty and loveliness of a Texan landscape. Nothing can exceed the beauty of her vast natural meadows in the spring and summer seasons; neither is it possible to form an estimate, even in imagination, of the number of useful domestic animals that may be reared on them without trouble or expense. Even in the winter season the pasturage is sufficiently verdant to dispense with feeding live stock.

Timber Lands.—No country in the world affords a greater variety of timber than Texas. Her forests of live oak and cedar are unrivaled. Her whole coast nearly, including all the bayous and river bottoms from the Sabine to the Nueces, is one entire belt of timber. The eastern section probably embraces more woodland than any other. It is heavily timbered with pine, oak, ash, walnut, hickory, pecan, mulberry, cedar, cypress, and other forest trees, which extend quite to Red River, occasionally variegated with beautiful prairies, containing from one hundred to several thousand acres. The soil is admirably adapted to grazing and agriculture, and the timber trade will soon become extensive and lucrative in this region.

Productions of the Soil.—Among the productions which may be regarded as naturally adapted to the soil of Texas, and which now forms a chief and important article of commerce, cotton stands pre-eminent. This is the great crop of Texas, and the source of much of its wealth and power. Its staple is uniformly good, and near the Gulf it equals, in length and fineness, the Sea Island cotton. It is an indigenous plant, and in the western region needs to be planted only once in three or four years to yield an abundant crop. The climate is ever favorable, and the soil, whether upland or lowland, woodland or prairie, is admirably suited to the culture of the article, and the crop can scarcely ever fail. The sugar-cane grows luxuriantly throughout the whole level region; but its culture, for various reasons, will not be extensive, nor will the production of sugar, unless forced by unexpected circumstances, probably compete with that of Louisiana for many years to come.

Tobacco grows almost spontaneously throughout Texas. It is an important production, equal in quality to that of Cuba, and will soon become an article of commerce and export.

The indigenous indigo of Texas is greatly

superior to the plant which is cultivated in the United States. It is manufactured in families for domestic use, and is preferred to the imported indigo.

The invaluable article of breadstuff, maize or Indian corn, is produced easily and abundantly in every district of the country. Two crops are annually gathered, yielding in all about seventy-five bushels of shelled corn. The first crop is usually planted about the middle of February, and the second the middle of June.

Wheat, buckwheat, millet, rye, oats, barley, and other small grains, yield plentiful crops to the farmer throughout the undulating district. The establishment of mills will be the signal for abundant harvests of grain. Flax and hemp are well adapted to the soil, and furnish ample rewaras to the labor of the agriculturist. Rice is already produced in considerable quantity, and can be grown to any extent.

The grape and mulberry abound here. They are indigenous to the soil, and grow luxuriantly, indicating that wine and silk, as well as cotton and tobacco, will one day become staples of the country. The vanilla plant grows wild. It can be successfully cultivated, and will become a commercial commodity of inestimable value. This delicious plant is highly esteemed in medicine, as a perfume to flavor the cigar, and in various culinary arts, &c.

The nopal, celebrated for the production of the cochineal insect, grows luxuriantly. Its fruit, with the leaves, furnishes food for vast herds of cattle and wild horses. It is, moreover, highly esteemed, and purchased eagerly in the Mexican markets.

In the western counties the musquit tree is very common. It is a species of locust, and, besides furnishing in its fruit excellent food for cattle and horses, it is superior to cedar even for the purposes of building and fencing. It forms here also the principal article for fuel.

The yaupan, or tea tree, deserves especial notice. Its leaf is very similar in form and flavor to that of the veritable Chinese shrub, and is not at all inferior to the black tea or bohea so commonly used. It furnishes a very acceptable and cheap beverage in lieu of the pure Chinese article, which in the interior is so often adulterated, and so costly and difficult to be obtained.

Cayenne pepper, called by the Mexicans *chile*, grows exuberantly all over Texas, and vast quantities are annually consumed for domestic use. The Indians and Creoles are extremely fond of it, and no Mexican would willingly relinquish his *chile* for any other luxury.

Many other sources of wealth and enjoyment are found here, and will in all good time be realized by her citizens, who are so in-

dustriously exploring the true springs of national greatness and individual prosperity.

Shrubs and Flowers.—The displays of vegetable nature in Texas are profuse, various and valuable; presenting, on the one hand, the stately and magnificent forest, and, on the other, delighting the eye with the rich and splendid scene of the luxuriant prairie, garnished with an endless variety of beautiful and fragrant flowers, and forming a landscape of indescribable and surpassing loveliness. It is an elysium for the florist and painter.

It is impossible to imagine the beauty of a Texan prairie, when, in the vernal season, its rich luxuriant herbage, adorned with the thousand flowers of endless hue and figure, seems to realize the vision of a terrestrial paradise.

Many of the northern garden flowers and hot-house exotics bloom on the prairies spontaneously, and in the utmost profusion, and in wonderful variety.

All the varieties of the genus *stellaria*—yellow, blue, and purple—display their rich and gaudy tints in every direction. The splendid and fashionable dahlia, an exotic highly esteemed and carefully reared in foreign hot-houses, is indigenous to the southwest. The numerous family of geraniums serve to adorn and perfume with their sweet fragrance the wild meadows of Texas. Several varieties of *digitalis* and *sanguinaria* are also found. Different species of the *nymphæa*, or water-lily, here “waste their sweetness on the desert air;” and the *bignonia*, or trumpet flower, and *lobelia cardinalis*, are very common. The May apple, bearing a delicate and delicious flower, is abundant, and violets everywhere form a common carpeting for the prairies. The beautiful and much-admired passion-flower is frequent in its season, while the perpetual rose, multi-flora and chickasaws, and other varieties of roses, are indigenous to the country, and grow without cultivation or care. The morning and evening primrose displays the mild beauty of its simple, but chaste and elegant flowers everywhere; while the jonquil and hyacinth, honeysuckle and sweet uringa, form a fancifully variegated nosegay, or are thrown together in most admired disorder throughout this paradise of flowers. The *hoya carnosa*, or wax-plant, both white and red, is common.

The mimosa, in the prairies of Texas, bears a flower of a delicate pink color, and much larger than those of the North. This plant has ever been, and ever will be, perhaps, a matter of curious interest and admiration to the naturalist and philosopher. It is very elastic to the tread, so that when the traveler has trampled over its drooping and apparently withered leaves, and looks back for the path which his rude footsteps have marked out, not a vestige of the invasion remains, but all again is life and verdure.

Fruits, &c.—Many of the fruits of the tropics and those of the North grow luxuriantly in Texas. The fig, a very delicious and much admired fruit, is very common, and may be raised in the greatest abundance, with very little labor or care. The Texas peach is unrivaled: nowhere is it of larger growth or richer flavor. The northern peach will not compare with it. The nectarine, quince and grape are equally luxuriant, and produce excellent fruit. A great variety of berries, as the mulberry, dewberry, whortleberry and gooseberry, grow wild, and in the greatest profusion. The pecan, walnut, and hickory nuts, are very abundant. Wild plums and crab apples are common, and the pawpaw produces a rich and delicious fruit. The orange, lemon and lime grow well there; and the pine-apple and olive may be made to ripen with a little care.

Garden vegetables of every description, and melons, are easily cultivated, and yield in the greatest abundance.

Animals.—The wild animals of Texas are not numerous. Formerly they were frequent and formidable tenants of the forest, but at present they are rarely met with.

The black bear frequents the forests and cane-brakes, and is a favorite object of the hunt. Wolves abound, and sometimes prove a great annoyance to the farmer. The pecari, or Mexican hog, though rarely met with, is a ferocious animal. The wild hog is frequently seen, and is sometimes very furious. These hogs are descended from the domestic swine, and have become wild by running at large in the woods.

Wild horses, or *mustangs*, originally introduced by the Spaniards, now roam at large, and are exceedingly numerous in the northern prairies and western sections of Texas. Many of them are animals of fine figure and spirit, and are highly prized for their beauty and fleetness. They are caught by the lasso, and may be thoroughly broke and rendered quite docile. The young are easily subdued and domesticated. They are hardy and active, and well adapted to the saddle or the stirrup.

Mingled with the herds of mustangs are often found jacks, jennies and mules. The rearing of these animals is a lucrative business. The expense of raising them is a trifle—the vast natural prairies affording inexhaustible pasturage for this purpose.

The buffalo, or bison, is found in Texas astonishingly gregarious. Thousands and tens of thousands in a drove are yet seen in the interior, roving over the prairies, whose luxuriant herbage furnishes them with the means of subsistence. They are much hunted for their flesh and hides. Their beef is highly prized; and the buffalo robes are in great demand, at good prices, and can always command a ready sale.

The deer is still more numerous than the buffalo, being found in every part of Texas. Hence venison is very common and very cheap. Deer-skins never fail to find a ready and profitable market. The moose, antelope, and mountain goat, are also found ranging upon the frontier or far west.

The fox-hunter will find constant enjoyment in this country, where Reynard peeps from every bush and brake. Raccoons, opossums, rabbits and squirrels are in great abundance, and a greater variety of smaller animals serve to stock the forests of Texas with game, and supply the hunter with endless and animated sport.

Wild Game.—Wild game is yet abundant in Texas. One accustomed to the use of the fowling-piece or rifle may, in almost any part of the country, keep a table well supplied. Besides the deer, which abound in the prairies, wild turkeys are very numerous, generally fat, and their meat tender and delicious. Prairie hens, large and fine birds, combining the qualities of the partridge, grouse and pheasant, are much esteemed, and very common.

Large and almost innumerable flocks of wild geese and turkeys, brants, teal, canvas-back and common duck, and other water-fowl, frequent the rivers, and lakes, and sea-shore, and are so plentiful that one can always furnish himself with as many of them as he desires.

Partridges, quails, pheasants, grouse, pigeons, and turtle-doves, are very plentiful. Snipes, plovers, wood-cock, rice-birds, and ortolans, which form so celebrated a dish in Europe, are here very abundant.

The bald-headed eagle and Mexican eagle, which is the noblest of the aquiline tribe; the vulture, various species of hawks and owls, are among the birds of prey, and very common.

Cranes, whooping, white and blue; bec rouge, a species of crane, with a beautiful red crest; swans, pelicans, king-fishers, and water-turkeys, are all aquatic birds of prey, and very numerous.

Crows, red-winged blackbirds, starlings, bluejays, different species of woodpecker, redbirds, martins, swallows and wrens, abound. The beautiful paroquet, the oriole, whippoorwill and cardinal, and the sweet-toned mocking-bird, enliven the woods with the beauty of plumage and melody of voice which belong to them.

Thus nature has not denied to Texas a less bountiful provision in this department of natural history than in those before mentioned.

Fish and Reptiles, &c.—The rivers and bays of Texas abound in fish of an excellent quality, of great variety, and some of them of peculiar character.

Redfish Bar, in Galveston Bay, takes its

name from the numbers of redfish which are caught there. This fish is very delicious, and often weighs fifty pounds. Yellow, white and blue codfish are found in abundance in the rivers and streams—sheepshead, buffalo, perch, mullet, pike, trout, flounders, suckers, and other fish common in American waters. The gar is a worthless fish, with a snout of immense length. The alligator gar is very large—several yards in length; its back is covered with scales, and it resembles the alligator, which is very common in the rivers and bayous, and of enormous size. Eels are very common in the fresh-water streams, and are much esteemed. Crabs, crayfish, shrimps, &c., are very plentiful; and oysters, clams, muscles, and various other marine animals, may be had “all along shore.” Beds of oysters line the coast, and nearly all the inlets along it. They are large and well-flavored, and are equal to any obtained in the Atlantic cities. The hard and soft-shelled turtle are common to all the rivers and bayous, especially near their mouths. Lizards, &c., are to be found everywhere.

No new country was every less troubled with serpents than Texas. Poisonous snakes, it is true, are often to be met with, but their bite is seldom or never fatal, as the antidotes are always very plentiful and close at hand.

The rattlesnake is common in the river-bottoms, and grows to an enormous size. Land and water moccasins, coach-whip and copper-heads, are the only venomous snakes besides the rattle found in Texas. The chicken-snake—very fond of poultry, as its name denotes—the garter-snake, and several others, are entirely harmless.

The “horned frog,” inhabiting the prairies, and probably of the lizard species, is very common here, and regarded as a curiosity.

Beetles, grasshoppers, butterflies, fire-flies, ants, wasps, mosquitos, spiders, and a great variety of others belonging to the same species and orders with these, are found in Texas.

Mosquitos are a great annoyance in the swamps, woods, and river-bottoms, but on the uplands are not so numerous and troublesome. The sandfly, ticks and redbugs are very annoying to travelers. If not carefully guarded against, they will spoil the beauty of the fairest face in creation, beyond the redemption of all cosmetics, for days to come.

The horsefly is a most malicious and troublesome insect. The gadfly is a dreadful tormentor of the cattle in summer, as the horse-fly, gnat, and others of like species of equal attachment to suffering humanity, are to domestic comfort.

The cantharides, or Spanish flies, so com-

monly used in medicine, are found here; and the honey-bee swarms, and has made her favorite haunt in Texas. Their luscious stores are deposited in hollow trees, and the bee-hunter is constantly employed to secure the honey and wax for exportation and trade. It is a common fact in natural history, that the bee is the pioneer of civilization; and the Indians, whenever they notice its approach, exclaim, “there come the white men!”

That species of spider called the tarantula, is very common, and grows enormously large. It is a most malignant and disgusting insect, and its bite is believed by many to be without a remedy; but this may be always at hand in the form of salt and vinegar, chloride of soda, sweet oil, or ammonia. Travelers and emigrants should always be provided with the antidote.

Minerals.—Texas abounds with minerals and interesting geological attractions. The silver mine of San Saba is among the richest in the world, and under the dominion of Spain afforded a considerable revenue to the Spanish crown. Gold has been found upon the Atoyac, and silver ore upon the Bedais.

Iron ore is found in many parts of Texas, some of it yielding upwards of 50 per cent. Lead, copper, copperas and alum are found in considerable quantities. Bituminous coal is found upon the Trinity and Upper Brazos, equal to some of the foreign coal. Salt is found in the greatest abundance. Immense quantities are annually taken from a famous salt lake near the Rio Grande, and transported to a foreign market.

Salt springs and lagoons abound near the Trinity, and a branch of the Brazos River has its water highly impregnated with mineral salt. Soda and potash are formed near the salt lagoons, in dry seasons, by the atmosphere.

Lime can be plentifully furnished from limestone existing in the undulating and northern portions of Texas. In the level district, oyster-shell lime can be substituted. Asphaltum is sometimes found on the coast, thrown aside by the sea from the opposite side of the gulf.

Large quantities of silicious minerals, agate, chalcedony, jasper, and some singular petrifications, are found near the mountains. The remains of whole forests are seen, near the Trinity and Brazos rivers, entirely petrified. Some of the trees are of enormous size.

Extensive quarries of red and white sandstone, or freestone, abound throughout the country. Near the Trinity and Colorado especially they are very common. At Austin, the capital, these is a valuable quarry of white stone, similar to that in Paris, of which the Louvre is built. It is soft and easily

worked with the knife, and may be reduced to any form; but on exposure to the atmosphere it becomes a perfect freestone, and is as granite or marble. It is a beautiful building stone, and busts, mantel ornaments, pipes, &c., have been made from it and sold at a high price.

The same kind of stone is found on the Trinity, and in the vicinity of San Antonio de Bexar.

Mineral Springs.—Texas, as well as the United States, is bountifully supplied with mineral springs. The Salinilla springs, both white and salt sulphur, near the Trinity, in Walker county, are very remarkable. They rise near the salines, in a picturesque valley, and are highly appreciated for their medicinal virtues. Not far from these, and near the Bedais, is a valuable white sulphur, super-saturated with magnesia, and possessing all the charms and healing properties of the celebrated white sulphur of Virginia.

Thirty miles west, in the same county, and on the road to Washington, is a blue sulphur spring of great value. Near the Cibolo, and about thirty miles from Bexar, is a mineral spring, the waters of which are in high repute, and have been visited for ages past by the Mexicans and aborigines for their medicinal virtues. Besides these there are others which promise to be valuable. Near Carolina, in Montgomery county, is a white sulphur spring of great excellence, whose waters possess similar virtues to those already noticed, and it may be resorted to by many invalids, with the prospect of speedy relief.

Population.—The population of Texas, at present, may be estimated at 200,000 souls, most of whom are Anglo-Americans and Europeans. The Mexicans and aborigines are reduced to a cypher, and will soon disappear. The great majority of the population of Texas, and the most valuable portion of it, consists of emigrants from the United States. The active and enterprising New-Englander, the bold and hardy western hunter, the chivalrous and high-spirited southern planter, meet here upon common ground, divested of all sectional influence, and lend their combined energies to the improvement of this infant but delightful and prosperous country.

Of transatlantic emigrants, the principal are English, French, German, Swiss, and Irish.

There is a large black population in Texas, and though for ever the property of their masters, and under the restraints of the law, they are invested with more liberty, and are less liable to abuse, than the slaves of the southern states generally. The laws in relation to master and slave are generally the same as in Louisiana. Free negroes are not allowed to reside in the state.

The few Indian tribes which inhabit the forests of Texas, are fast retiring to the wilds of the West, where they will soon separate, and their names and language for ever perish.

Education and Religion.—The social and religious institutions of Texas are beginning to develop themselves with rapid strides; and under wholesome laws and the banner of freedom, the cause of liberty, education and religion will prosper. Her free constitution guaranties the right of self-government, and of worshiping God according to the dictates of conscience—the end and aim of all true patriots. No person shall be molested on account of his religious or political opinions, provided he does not disturb the public peace.

Primary and common schools are established in the chief towns and counties, and education is becoming universal, and easily attained. The College of Ruterville has been liberally endowed by the state, and is quite flourishing. Galveston University is under full operation, and is very popular. Churches of different denominations are established throughout the land. Galveston has five already—one to each 1,000 inhabitants; and Houston, we believe, has nearly as many more.

With these several affinities and beautiful combinations, we may safely predict a high standing for Texas, whose materials of greatness are abundant, and only need some plastic hands to give them form. We see in her a new state, growing up like a young girl by the side of her yet blooming mother—a lovely scion from the parent stock.

Government.—The administration of Texas is that of a single state of the United States. The governor is to be elected by the people for four years, and is ineligible for the succeeding term. There is a Senate and House of Representatives, which meet annually; the members of the former serve for four years, and the latter two. There is a Secretary of State and a Commissioner to the Land Bureau. The Supreme Court holds an annual term at the capital; and Superior and District Courts are in session nearly the whole year, in the several counties. These courts are open for the prosecution of claims and debts, and redress of grievances to alien friends upon the same terms as to resident citizens. Property sold under execution is sold for cash, without appraisal.

The real, personal, and mixed estate of any citizen of Texas, dying intestate, descends in parcenary to his or her kindred, male and female, as follows:

1st. To his or her children, and their descendants, in any there be.

2d. If none, then to his or her father's mother, in equal proportions; but if only

the father or mother of the intestate survives, then the estate is divided into two equal portions, one of which goes to the surviving parent, and the other to the brothers and sisters of the intestate, and to their descendants; but if no brother or sister, or legal descendants of such brothers and sisters survive, then the whole estate goes to the surviving parent.

If there be neither father nor mother surviving, the estate then passes to the brothers and sisters, or their descendants.

3d. In case of such kindred as above mentioned surviving, the estate is then divided into two moieties, one of which passes to the paternal and the other to the maternal kindred.

4th. When one joint tenant dies before severance, the right of survivorship does not attach, but the interest of the deceased joint tenant descends to his or her heirs and legal representatives.

5th. Property of an intestate without issue, acquired by gift, demise, or descent, from the father of such intestate, reverts to the paternal kindred, without regard to the mother, or maternal kindred, of such intestate. So, *vice versa*, if derived from the mother, then it reverts to the maternal kindred, without reference to the paternal. Illegitimates can only inherit, and transmit inheritance, on the side of their mother.

6th. Alien heirs of deceased citizens of Texas are allowed nine years to dispose of the estate. The right of the administration is guaranteed, 1st. To surviving husband or wife. 2d. To the nearest of kin. 3d. To principal creditor.

The taxes of the state are quite moderate.

The common law of England is the prevailing law, unless otherwise opposed by statute.

Lands and Titles.—The old maps of Texas generally represent the whole country as occupied and disposed of by *grants*, to *empresarios*. This is calculated to convey the idea that there is no vacant or unappropriated land in the country. Such an idea is totally erroneous, and the cause of much mischief. Of these contracts or grants, so called, none have been fully complied with except Austin's. Of the others, only a part of the families contracted for were ever settled, and most of them have expired by the terms of the contracts.

There is not sufficient data, as yet, to state positively how much land has been appropriated; but it is believed that the appropriations will not exceed one-tenth part of the public domain. It is not true, as has been often stated, that all the good lands in Texas have been taken. A great portion of the best soil in the country yet remains unlocated, and will in all probability for many

years to come; or, if purchased, will be in the hands of speculators, who will re-sell it at a fair advance.

Speculators have made, and will continue to make, fortunes in Texas, as land-jobbers. Sales are rapid, and the price of land is continually increasing.

The emigrant, however, should look well to his title, and not purchase till he has made a survey of the land, or is well apprized of its situation and value, by some personal friend, in whose word and judgment he can place the utmost confidence.

Fraudulent scrips and titles are very numerous, and the unprincipled are very ready to practise upon the credulity and inexperience of the emigrant, and cheat him out of his goods and money. The new comers cannot be too cautious.

A great number of spurious land titles are in circulation, purporting to issue from land companies, which are quite valueless. The El Dorado Company, Galveston Bay, and Texas Land Company, the Arkansas and Texas Land Association, and the Colorado and Red River Company, have each issued scrips in New-York and other places, which have no legal foundation, and give no title to lands.

There are various descriptions of land titles in Texas. The first are those emanating from the Spanish government. Many of these are unconditional and indisputable, and are undoubtedly the best that can be found. Those emanating from the Mexican government, many of which are good, and others totally invalid, certain conditions having been attached to the grant which were never fulfilled by the grantee. Most, if not all, the *empresario* contract grants, except Austin's, have been declared forfeited and void.

Another class of titles are those emanating from the government of Texas, or Texas and Coahuila. These are of various kinds; many of them seem to have been granted so incautiously, and to have offered at the same time so many facilities for fraud and deception, that it is almost impossible, without a judicial investigation, to pronounce any particular one of these titles to be good or bad.

The titles emanating from the State of Texas may be divided into four classes:

1st. Those titles granted to all who arrived in the country previous to the Declaration of Independence.

2d. Titles granted to those who were actually present in Texas at the Declaration of Independence, or who assisted in the campaign of 1836.

3d. Titles, the head rights of colonists who have arrived in the country, and have become citizens at various periods since the Declaration of Independence.

4th. Titles created by the issuing of government scrip.

It is notorious that many forged titles to lands in Texas still continue to be sold in the United States. Many of these may be purchased all over the United States and Europe, but they are worthless. Good and valuable titles, however, may be obtained with proper care and caution, though a government *patent* from Texas, be it known, is only a government *quit-claim*, and does not confirm an indisputable right. It releases the government, but does not guarantee to the purchaser his land against a bona fide title, or a legal claimant.

The resources of Texas, therefore, are unbounded, and her lands offer the greatest inducement, to emigrants of enterprise and character, of any upon the continent of America, and the utmost dependence may be placed upon the determination of the Texan government to insure all titles to land that have been legally obtained under existing laws.

The Mexican yard or *vara*, is established at three geometrical feet—a straight line of 5,000 varas is a league—a square, whose sides shall be a league, is called a *sitio*—five sitios is a hacienda. A sitio or league of land is 4,428 English acres. A labor is 177 acres.

How to Thrive.—Let those who reside in cities, and cannot find profitable employment, go to Texas and raise their food out of the bosom of the earth.

Any man with 500 dollars can become an independent farmer, and with industry and economy may continue independent for life, and have a good home for his family at his death.

Thus, 100 acres of good land will cost	\$200
Of this land 20 acres can be fenced, and a good crop put into the ground for	50
A good log-house will cost about	50
Expenses of voyage or journey	50
Add for support of family till the crop is gathered, and incidental expenses	100
For purchase of horse and cow, and pair of oxen ..	50
Total	\$500

The crop, when gathered, will be sufficient to maintain a family till another and a larger crop can be raised, as more land could be fenced and cultivated the next year by the settler himself, say ten acres. The 20 acres will yield two crops of corn, in all about 1,000 bushels, worth one dollar per bushel, or \$1,000, besides sweet potatoes to any desired quantity. This would be more than enough to maintain the family the second year. In addition to which they would have the produce of their garden and dairy, and the increase of stock, swine, sheep, poultry, &c., which is of great value.

A soil that yields the fruit of nearly every

latitude, almost spontaneously, with a climate of perpetual summer, must, like that of other countries, have a seed-time and harvest. Though the land be literally flowing with milk and honey, yet the cows must be milked and the honey must be gathered. Houses must be built and inclosures made. The deer must be hunted and the fish must be caught. From the primeval curse, that in the sweat of his brow man shall eat bread, though its severity be mollified, there is no exemption, even here. The emigrant must bear in mind, that in a new community labor is to be performed; that if he cannot labor himself, he must take with him those who can. He sees about him all the means of supplying, not only the necessities, but also the comforts and luxuries of life. It is his part to apply them to his own use. He is here abundantly furnished with the raw material, but his hands must mould them into the forms of art.

No hay is required, as the cattle subsist in the fields, and roam without fodder or shelter throughout the year.

Here then, after deducting all expenses, is a farm, which the second year will yield double the outlay, and the settler will have a property worth twelve or fifteen hundred dollars, and about 1,000 dollars in money, after having the original purchase money returned to him with interest, and maintaining himself and family for two years.

Go, then, to the El Dorado of the Southwest, while you have something to go with—another season your substance may be wasted, and it may be too late.

Hints to Emigrants.—Though Texas were quite the El Dorado it has been represented, yet it would be desirable for the emigrant, accustomed to the climate, institutions, manners, habits and customs of the northern and middle states, to say nothing of Europe, to ascertain in the first place, as far as possible, whether he would like those of the South; and if, after due inquiry and personal observation, which, after all, is the best, he believes that he would, then he runs but little risk of disappointment in removing to Texas.

Families emigrating should take along with them provisions for six months or a year, if possible, as it will save them much cost and trouble. Also, such light furniture as they can conveniently carry, and such as will be useful in a new home, and is generally scarce in a new country. Every individual should be well supplied with substantial clothing for winter, as well as light clothing for summer. Summer clothing is not always a sufficient protection against the northerners peculiar to the country. A good blanket capot is indispensable.

A good supply of garden-seeds and farming utensils should, if practicable, be taken:

they will contribute exceedingly to the health, comfort and pleasure, as well as to the support of the new settler.

Each family should be supplied with a strong cloth tent and mosquito netting, to protect them from the weather, &c., till their cabins are erected. These are generally constructed of logs or hewn timber, in the cottage style, one story high, though many a wealthy planter and farmer has his frame or brick dwelling, amply furnished with articles more sumptuous than those in common use.

The living cannot but be excellent in a country which is supplied with such a profusion of the good things of life as Texas. Vegetables of every description, wild fowl and game, beef, pork, venison, poultry, butter, eggs, milk and honey, &c., with tea, coffee, sugar, and all the foreign luxuries usually found upon tables in other states. There is little cause or opportunity to complain of the quantity or quality of fare which is to be found upon a Texas table.

Mechanics should take along with them abundance of tools, and go resolved to continue their industrious habits, to live temperately and economically, and they will be sure to make money and enjoy excellent health.

On embarking for Texas, no passports, certificates, or attested papers of any kind are necessary, except on legal documents. If your destination is for the towns near the Gulf on the east, or for lands in the west of Texas, go by sea to the nearest point of your destination. It is less expensive, and takes less time. If your destination is near Red River, take the inland route. If you start from New-Orleans, apply to some friend for information; but in all cases it is preferable for an emigrant to place his business in the hands of a merchant acquainted with the trade: as by so doing he may save much trouble and expense. We have already recommended to emigrants to take their furniture, farming tools and servants with them; and to mechanics, their furniture and tools of trade. If you start from the state north of Virginia, it is cheapest to go direct by sea, or down the Ohio and Mississippi; if from the southern states, by Mobile or New-Orleans. From New-Orleans there are several steam-ships making regular trips to and from Texas, and excellent packets, by which emigrants can be transported with their baggage, in two or three days, at a trifling expense.

The autumn is the best time to remove to Texas.—1st. It is better traveling; the roads are dry, and the temperature of the weather is more agreeable. 2d. It is more healthy on the road, and to be there at the opening of spring, and become accustomed to the climate and warm weather by degrees, there will be a fairer prospect of continued

health. 3d. It is the season when provisions are cheapest and most plenty. 4th. It is the shortest time a person can be in the country and raise a crop the ensuing season. To arrive in October or November, he will have plenty of time to build a cabin, fence in his ground, and prepare for a crop.

The spring time is more delightful, and those who emigrate at this season are universally charmed with the beauty of the country, and their first impressions are more vivid, and probably more agreeable.

Those who go by sea may reach there in March or April, in time to seek a location, and establish themselves in season for a crop. At this period every thing is enchanting.

No condition can be more independent and happy than that of the Texan farmer or planter. With a few weeks' labor in the year, he can supply himself and family with all the necessaries and luxuries of life. He can make his own sugar and molasses, and, if he pleases, supply his table with most excellent wine from the native grape. His table may be loaded at all seasons with the finest poultry, fish and game, and the choicest garden vegetables, and the rarest fruits. His sheep, goats, hogs, cows, horses, mules, cattle, &c., require no more care than just to prevent their running wild, furnishing at all times abundance of beef, pork, butter, milk, wool, hides, &c., for domestic use. He may raise his own cotton, and wool, and silk, and weave his own household garments. The palm and birch furnish the best materials for hats and beds, and moss for mattresses, that can be used in this climate. The native chicory furnishes an excellent and healthy substitute for coffee, and the yaupan for tea, while salt is every where cheap and abundant.

No country in North America holds out such inducements to emigrants as Texas, both for the salubrity of its climate, the fertility of its soil, and the variety of its products.

Emigrants with their families would do well to take their beds and bedding, and a moderate supply of culinary utensils, the most essential farming tools, and a good stock of clothing. The more cumbersome household furniture, as chairs, tables, bedsteads, &c., are not essential. Their place can be supplied by the ruder articles of domestic manufacture. Mosquito bars, or netting, are indispensable to comfort at night, and should by no means be forgotten.

Emigrants intending to settle in Texas should not rely upon what the inhabitants of one section may say of other portions of it. Self-interest, as in other matters, strongly warps the judgment. The statements are too often contradictory, and little reliance ought to be placed upon them. The best way for emigrants to gain correct informa-

tion is to go and examine personally for themselves. Let every farmer at the North, who has to tug and toil on the sterile and rocky soil of New-England, with eight months of winter, to support his family, judge for himself, whether it is better to emigrate or stay where he is—whether it is better to struggle for existence, and feel the cold grasp of poverty, or roll in plenty and live at ease.

Miscellany.—The first body of colonists from the United States established within the limits of Texas, was planted on the banks of the Brazos de Dios, by Gen. Stephen F. Austin, in the year 1821.

To the vast and opulent territory of Texas, the Spanish conquerors, more than three centuries ago, gave the names of *New-Estremadura* and *New-Spain*, from the resemblance of the towns on the sea-board to those of their own country.

June 26th, 1832.—Attack and surrender of the fort at Velasco.

October 1st, 1835.—Battle of Gonzales.

October 6th.—Successful attack upon Goliad, in which the Mexicans are again defeated.

October 28th.—Battle of Conception, in which Bowie and Fannin gain a brilliant victory over 400 Mexicans.

December 9th.—Attack and surrender of Bexar, in which the enemy lost 590 killed and wounded.

November 3d.—General Convention at San Felipe.

March 4th.—Convention assembled at Washington, on the Brazos, and form an independent government. 2d. Independence is first declared.

March 6th.—Storming of the Alamo by the Mexican forces, headed by Santa Anna in person. The brave defenders, amounting to only 150, after a long and obstinate resistance, are overpowered and destroyed. Here, Travis, Bowie and Crockett fell. The loss of the enemy, during the siege, amounted to about 1,500.

March 14th.—Colonel Fannin, with a force of only 175 volunteers, capitulates, after a hard-fought battle, to Urrea's division, consisting of 700 cavalry and 1,200 infantry, the flower of the Mexican army. From five to seven hundred Mexicans were destroyed. The prisoners were marched back to Goliad, and on the 27th, with Major Miller's and Ward's detachment, amounting in all to about 400, basely betrayed, and, by orders of Santa Anna, shot down in cold blood.

April 6th.—Destruction of Harrisburgh.

April 21st.—Battle of San Jacinto. Total route of the Mexican army. Santa Anna made prisoner.

1845.—Resolutions of the United States Congress annexing Texas to the American Union.

The city of Austin is assigned as the seat of government.

The Supreme Court has appellate jurisdiction only; the district courts have jurisdiction both in law and equity; and in all cases in equity, either party may claim a trial by jury.

The pardoning power is vested in the Executive, except in cases of treason and impeachment. The governor possesses the veto power, qualified, however, as in the United States Constitution.

In no case can the legislature authorize the issue of treasury warrants or treasury notes, or paper of any description, to circulate as money.

The legislature has power to protect by law, from forced sale, a certain portion of the property of all heads of families. The homestead of a family, not to exceed two hundred acres of land, (not included in town or city,) or any town or city lot or lots, in value not to exceed \$2,000, shall not be subject to forced sale for any debts hereafter contracted; nor shall the owner, if a married man, be at liberty to alienate the same, unless by the consent of his wife, in such manner as the legislature may point out.

Taxation is to be uniform throughout the state; the legislature may pass an income tax, and it may exempt from taxation \$250 worth of the household furniture or other property belonging to each family in the state.

The legislature cannot contract debts to exceed in the aggregate the sum of \$100,000, except in case of war, to repel invasions, or suppress insurrections; and in no case shall any amount be borrowed, except by a vote of two-thirds of both houses of the legislature.

"Texas possesses eminent advantages in the extent of her territory. We have no certain data upon which to base an estimate of the superficies in our limits; but we extend from the upper Red River to the Rio Grande, and from the Sabine to New-Mexico, with an area of something over 200,000 square miles, equal to four of the largest of the old states. Supposing the prosperity of the state, and the necessity for the means to fulfil the national faith, may require Texas to surrender to the United States the permanent or temporary possession of the north-western section, as a separate territory for the Indians, we shall, nevertheless, have more than double the amount of any other state. So far, then, as the influence of being the 'Empire State of the South,' in relation to territory, is calculated to gratify the pride, or the ultimate destiny of the capitalist or settler, Texas presents such inducements. We know what New-York gains in all public movements, if not in all enterprises, by claiming and receiving the character of the 'Empire State.' In the same pro-

portion, if not in greater, Texas may hope to be the leading, as she was once the 'Lone Star' of the South. As a member of the national confederacy, she will exercise the influence which will secure to her the rights and the patronage that all the large states have heretofore enjoyed; and if the extent of her territory should not inspire a laudable pride, she will still stand out in the history of the age, as covering all the ground claimed, prior to the Florida Treaty in 1819, as the south-western limits of Louisiana, and thus be entitled to the glory of having reclaimed, by her valor and enterprise, what had been necessarily yielded of the rich treasure acquired for the great valley, in the treaty of 1803, by the sagacious statesmanship of Jefferson and Monroe.

"In the second place, Texas offers eminent inducements in her climate. No consideration is, perhaps, more important to those seeking a country suitable for residence or enterprise, than the character of its climate. Health is the first, and comfort the next great object, in selecting a permanent abode. Tested by these qualities, Texas presents prominent inducements. Along the coast, wherever the position is free from stagnant fresh water, the most uninterrupted health prevails; and in the high table lands, commencing one hundred miles from the Gulf, and extending to the sources of the Trinity, Brazos, Colorado, Guadalupe, San Antonio, Leona, Perdinalles, San Saba and Concho, the climate is as balmy and delicious as an altitude of five thousand feet from the sea gives in every district of the tropical region. The latitude, reaching from the 26th to the 34th deg., guarantees mild winters, and the altitude from the sea, as well as the cooling breezes from the Rocky Mountains, secures comfort, and a moderate temperature during the summers. The delightful character of the climate is, indeed, becoming so generally known and appreciated, that already invadents are hastening hither from all the northern and middle states, to reinvigorate their feeble constitutions. Northerners, it is true, sometimes contribute to the marring of this beautiful picture, though they continue but for a few days, and their uncomfortable effects are easily guarded against by suitable apparel and adequate houses. Some of the choicest fruits and grapes are indications of the climate. In our ancient city, founded as early as Philadelphia, we have as large and thrifty fig-trees as may be found in the tropics, and our peach is unrivaled—our climate for that fruit resembling that of Persia, its native country. The grape, at present, if not originally indigenous to the country around the high plain of El Paso, on the Rio Grande, is beginning to attract the horticulturists from every part of our country, and its wine has as just a claim as any

other, to having been the 'Nectar' of the heathen gods. We regard Texas, then, on account of her favorable climate, as an inviting theatre for the enterprise of the immigrant and capitalist."

TEXAS SUGAR LANDS, ETC.—The greatly interesting and able discourse of the Hon. P. A. Rost, delivered before the Agricultural and Mechanical Association, in 1845, extracts from which are published in the December (1847) number of the *Commercial Review*, is well calculated for and worthy the perusal of sugar planters, and of all others disposed to cultivate the sugar-cane in Texas, as it is full of much valuable information and careful observations. Judge Rost has most likely never visited the neighborhood of Galveston city, Galveston Bay, and its tributaries. If he had, he would not have fallen into the error in his address that sugar-cane would not ratoon here. The information, it appears, came to the Judge from a Mr. John C. Marsh, who, as is stated in the article, is said to have planted sugar-cane in this neighborhood for five successive years, without ever obtaining ratoons.

To prove the incorrectness of such a broad assertion, I have only to state that there are now growing at New Washington, Col. Morgan's plantation, sugar-cane which has ratooned the fourth year. New Washington is at the margin of Galveston Bay. Some four years ago, a number of stalks, the third year of their ratooning, were taken to this city and exhibited, and were then and there seen by hundreds of living witnesses. These stalks had matured full seven feet, and were of an equal height the preceding year; they were what is called "ribbon cane," and were pronounced by old and experienced planters equal if not better than any grown in the United States, and not inferior to any grown in the West Indies.

As far back as 1830 to 1832, the sugar-cane was cultivated with success on the Trinity River, by Judge Williams, and the ratoons of the third year were nearly equal to the growth of the first year, and the sugar therefrom made was equal, if not superior to any ever imported from Louisiana, in sweetness, color and grain. The place where this sugar was planted is about twenty miles from Galveston Bay, on the Trinity. It is conceded by all impartial men, without any hesitation, that the lands on the "Caney" are superior to any of the sugar lands in the Union, and I could name many who are, and have been cultivating the cane there on a large scale, with great success and profit. Amongst the largest planters, I would name Mr. Duncan and Mr. Sweeney. Both of these gentlemen are well known to the sugar planters, and samples of their crops have repeatedly been sent to your market. These

gentlemen, I have no doubt, would willingly give any information to sugar planters as to whether cane will ratoon in that neighborhood, being only about forty miles from Galveston Island. Mr. Solomon Barrows, near Cedar Point, on the shore of Galveston Bay, has now a fine field planted with cane (ribbon) which has ratooned for several years past, and will vie with any ever planted in Louisiana. Mr. M. Dunman, near Bolivar Point, has now, and has had for several years past, as fine a field of cane as ever was or may be seen, in Louisiana, and which has for several years back ratooned. Mr. Dunman's residence is about twenty-five miles from Galveston. Mr. McMillen, in the neighborhood of Houston, and about twenty-five miles from Galveston Bay, has had last year, and a year before last, cane which matured, being then the fifth year of its ratooning, seven feet high. The facts are here now well established and ascertained, that the sugarcane on the prairies, near the bay, furnishes by far more saccharine matter than the cane on the bottom lands, although not so luxuriant in its growth.

The cane of Mr. Sweeney's plantation, on the Bernard River, has ratooned, as I am credibly informed, the sixth year. Mr. Duncan, who also plants on the Bernard, has made sugar which was considered in Galveston by judges, equal to any ever imported from New Orleans, or offered for sale in that market. Col. Jackson has planted sugar for some three or four years on his plantation, which is at about a distance of from five to six miles from Galveston Bay, and as I am informed, with success, and obtained his seeds of planting from Colonels M. T. Rodgers and Amasa Turner, both of whom had their plantations on Cedar Bayou, in the immediate vicinity of the bay. I could and might cite a very large number of other planters in this neighborhood, but believe that the "facts" set forth above will satisfactorily prove the incorrectness of Judge Rost's statement concerning the sugar lands of Texas generally, and those of Galveston Bay, and the lands as far south as New Orleans, and its neighborhood, in particular. As to the individual from whom the Judge received his information, and the credibility of the informant, I can say nothing, except that after a diligent inquiry of those residents of the vicinity of Galveston Bay, who have resided here for twenty years or more, I have not found any one who was acquainted with any individual of the name who resided in this part of the country.

It would here not be amiss to mention that any Louisianian who has traveled in midwinter through the prairies of Texas, which the judge denominates the "naked lands," would not find that he has changed climate, and that he has traveled out of the

regions where tropical plants love to grow. The writer of this has yet to learn that in the State of Louisiana tropical plants love to grow in the winter season, they being exposed to those unmitigated furies of northwesterners, which the writer has often experienced in Louisiana, but the writer does know, that all southern plants, leaving tropical plants out of the question, cannot grow there unless artificial means are resorted to; and a traveler from New Orleans would only be under the necessity of a one half hour's ride to visit the gardens up and down the river, from Carrollton to the battle-ground, to inquire for what reason you Louisianians have so many hot-houses and hot-beds in your gardens?" The answer will be, "Because the frost destroys the southern plants, and they cannot be exposed to the cold weather which we regularly have here every winter." And as every one knows, New Orleans and its neighborhood "is not built on naked lands, but on the fertile soil of southern swamps," which luckily for New Orleans, encircles it nearly the whole extent, and prevents the northwesterners from striking the tropical plants with their unmitigated fury. The year 1837, I think, gave a good example to Louisiana, that southern plants cannot well prosper there in winter, and every inhabitant will recollect that in that year every orange tree was killed. Now, in such weather, a traveler just from the northern States riding out on the Louisiana prairies, would find and certainly say, that he has not come to the Elysian fields of Louisiana, but would believe that he was somewhere near his own home. And I do candidly believe, that the northwesterners coming from beyond the Rocky Mountains, do not go south in their travel through such a vast country, for the sole purpose of giving to this portion of our Union, Texas, the monopoly of keeping their unmitigated fury within their own state limits, but I must believe that they cross sometimes the boundary line, the river Sabine, and pay some visits of respect, for old acquaintance' sake, to our neighbors, the sugar planters of Louisiana.

In conclusion, then, I am bound to state that the furies of the northwesterners are in Texas not looked upon and felt as much as the northeasterly winds, and by a glance at the map it will be seen that they come from "Louisiana," that is to say, a region of our Union "where tropical plants love to grow."

H. W. W.

Since receiving the above paper some one has kindly sent us from Texas "*A Statement of the Relative Advantages and Capacities for the Culture of Sugar in Louisiana and Texas. By a Disinterested and Close Observer.*" We are delighted to receive and publish it for the valuable matter embraced. It is our desire to do full and ample justice to Texas

in every particular, and we invite the co-operation of her citizens.

The writer of the following article proposes to state his views of the climate, seasons, fertility and fitness of soil, product per acre, quality of the sugar, facility of getting fuel, of navigation and market, of supplying a plantation with teams, provisions and lumber, and the relative prices of the land, etc., etc.

The Climate.—Not only from the fact of there being a full half of a degree of latitude in favor of Texas sugar lands on the average, over Louisiana, but from the range of the mercury and facts observed, I would say that the climate of Texas is milder. The mercury in lower Texas never falls below twelve degrees, whereas in Louisiana it has been as low as ten. The orange trees and tender plants are killed in both countries about once in ten years. The great bug-bear, a norther, so much talked of in Texas, is, on chemical principles, felt more by our nerves than shown by the thermometer, which shows nothing very cold, whilst animals suffer under it from the general sweep of the wind. It would be the same in Louisiana if the useless swamps, which are quite as large as the prairies of Texas, were as much exposed to the winds. The sea air has a greater effect in Texas to equalize the temperature than in Louisiana, from the extent of the coast and numerous bays. The Palma Christi, the egg fruit, the okra and other tender plants grow with great luxuriance, and in Texas approach the size of trees. The sweet potatoe and sugar-cane flower in this climate, and the cane ratoons to such perfection that fair crops are made from ratoons of five years old. Of this more will be said in its proper place.

The Seasons.—The seasons are a little more inclined to be dry in Texas than in Louisiana, which is an advantage, as crops are injured more by excessive wet than dry weather. In an average of five years in Texas, only one was too wet for good culture, and none too dry for good crops of sugar and cotton. The soil of Texas when pulverized, is an open texture which lets down the roots of plants to the moisture, instead of baking into a tight pan or crust, as is the case in Louisiana, upon the Mississippi River and on the Teche. The planters in Texas, if there be moisture enough from rain, to bring up the plant, feel secure of a crop.

Storms.—The tornado scarcely ever invades Texas, owing to some conformation of the coast, and gales are rarely strong or long enough in duration to blow down either cotton, corn or cane.

Fertility.—The soil of Texas is better tempered, and therefore richer than in Louisiana. It seems preposterous to assert that

any soil can be richer than the alluvial of the Mississippi river, yet that has often either too much clay or sand, (oftener the former,) which renders it tight and unkind, or too porous. The sand drifts from the overflows, prevent it from having the substance necessary to great fertility. In Texas the lands of Caney, San Bernard, Oyster Creek, Brazos, Colorado, and of many other regions, are a black soil, mostly a vegetable mould, for five or six feet down, and mixed enough with loam and sand so as to be rightly tempered for great fertility. Three thousand to four thousand pounds of seed cotton are about the average produce in good seasons, and full four thousand have been raised to the acre, and sugar in proportion. No lands can be richer than the bottom lands of Texas.

Cost of Lands.—In Louisiana, the sugar land on the Mississippi, Lafourche, Terrebonne county, Attakapas, and other places suited for the culture of sugar, will cost on the average, when improved, forty dollars per acre. In Texas, lands equally as rich and better tempered, will only average from three to five dollars an acre, making a difference of at least seven-eighths in the outlay or investment, which would overbalance a thousand inconveniences, if they did exist.

Navigation and Getting to Market.—In one-third of the sugar district of Texas, the navigation of the Brazos, Bernard, Oyster Creek, Colorado, Gaudaloupe, Navidad, Trinity, Jacinto, Neches, Sabine, Caney, Lavaca Bay, Matagorda Bay, Nueces, and other waters, let out the crop as easily as the average streams and bayous in Louisiana. In the other two-thirds, the cost will be something more for transportation, say one dollar a hoghead more than in Louisiana, which on the wide average for all the crop will be three-fourths of a dollar more to the hoghead for the whole state, and this cost would be ten times made up by other facilities that can be easily appreciated and clearly pointed out.

Quantity of Sugar Lands in Texas.—In Louisiana, by Champomier's statistics, there are now about nine hundred plantations, large and small, all told, in sugar, which have never produced over two hundred thousand hogheads, and on the average only one hundred and forty thousand.* If more be put in culture all the inconvenience appertaining to the remote districts of Texas, will attend it so that the heavy draining and other inconveniences there, will make any new lands equal in cost to the old places, before a crop can be realized. There are in Texas, in connection with wood, fertility, navigation

* Mr. Champonier estimated the number of sugar estates for 1847-8, at twelve hundred and forty. It will perhaps exceed thirteen hundred. New regions in Louisiana are every day taken into sugar culture. —Ed.

and climate, by my estimate now, (not counting eventual facilities to be made by improved navigation or railroads,) the following amount of lands suited for sugar on the streams named respectively :

On Oyster Creek, both sides, for 120 miles following its meanders, land for	120	Plantations.
On Brazos River, counting two or three miles on each side	200	"
On San Bernard, both sides, counting two miles out from it	70	"
On Caney, for sixty miles, following its meanders, and two miles each side	140	"
On Colorado	100	"
On Trinity, both sides, 3 miles out	120	"
On Guadalupe	80	"
On Navidad	40	"
On Tresplacios	30	"
On Garcita and other small streams near	40	"
On Nueces and San Antonio, near their mouths	40	"
On Lavaca and small streams near	40	"
On Jacinto	70	"
On Spring Creek	50	"
On Neches	40	"
On Sabine	30	"
On Chocolate & neighboring bayous	30	"
On Peach Creek	40	"
On Cedar Lake and river and other points near	20	"
On Mill and Cumming's Creeks	40	"
On all intermediate grounds more than*three miles back, between all the waters	100	"
1,440		

The above does not include the wide-spread prairie, much of which is fertile, nor the Rio Grande lands, owing to the want of safety for the slave-owner there at present. This, of course, is only an approximate estimate, some of the numbers being probably too large, and others too small, yet the error cannot be large enough to be of any importance. The estimate is for the average size of the plantations in Louisiana; that is to say, about one hundred and fifty hogsheds each, with a sufficiency of timber and wild land for further increase.

Health.—Texas is a country infinitely drier, and with fewer swamps and freer circulation of air than Louisiana, and experience says that negroes are more healthy, and multiply faster. The loss by sickness and death among negroes has been estimated at ten per cent. less on the rich alluvial bottoms of Texas than on similar lands in Louisiana. This is probably very near the truth.

Products per Acre, and Quality of the Sugar.—Two hogsheds, as far as the effort or trial goes, are very common to the acre as a fair average in an average year. The quality of the sugar, drier and whiter, and the grain better and firmer. The samples compare with the best Louisiana, and appear better, and the molasses less in quantity. They think it will be dry enough to box. It is proper to remark that the manufacture of Texas sugars has been generally a matter of experiment

with most planters in Texas. The quality of the juice is different, and probably requires some difference in the process of boiling, etc. Besides, most of the planters here commenced this business without any previous experience, and many failures have taken place solely from a want of knowledge. A conclusive proof of this is the vast improvement that is manifest when we compare the late samples with those of former years.

Ratooning.—Good sugar, and cane thick enough for a stand, has been made from seven year old ratoons. A small falling off in the stand occurs about the fifth year, and all experience goes to say that for five years the ratoons will do well. In Louisiana, three years are as long as they succeed well, when it becomes necessary to replant, and some doubt about the policy of leaving them that long; I would say that two years will be gained in the ratoon in Texas, which is a great saving. This must be owing to the better climate of Texas, and to the drier soil, which preserves the root better.

Cultivation, Coco and Grasses.—There is no coco in Texas yet, and but little crop grass. Half of the cultivation with a plow is all that Texas would require in comparison with Louisiana, both to keep the crop clean, and the land light and fine.

Supplies for a Plantation.—In Texas, all plantations will raise their meat, both beef and pork, in abundance. The stocks of cattle require no care, and hogs but little to furnish all that is wanted of meat; and corn grows abundantly and easily for the supply, up to any demand. In Louisiana, all the meat, and, I would say, half of the corn and hay must be purchased. The difference in provisioning two places of the same size will be, in Texas, only one-fourth of what it is in Louisiana. The rich meadow-like prairies, covered with a luxuriant growth of grass, lie near and contiguous to all the plantations in Texas, and these not only furnish meat for nothing, but, if bought, will cost $1\frac{1}{4}$ cent a pound, and bullocks of five and six years old, weighing 650 pounds, can be had generally from six to eight dollars a head. Mules can be raised, as well as cows, hogs and sheep, without any feeding, summer or winter.

Lumber, Staves and Brick.—There is a great scarcity of cypress in Texas, adjoining the plantations. In two-thirds of the cases, cypress and pine lumber will have to be brought from a distance. In Louisiana, not more than one-third of the plantations have to get staves from any other place. But all will have to get this material from abroad in time, and this may be counted upon. The cost of getting cypress staves and building timber is not very much, and will form a small item compared with buying provisions, teams and fuel. Brick are easily made on all the places in Texas, the clay being generally good. Should the sugar be made dry enough

to box (which is very likely to be the case), then any wood could be used, such as cotton, poplar, sweet gum, sycamore, elm and other kinds, and a circular saw would also cut all such timber into staves, or boards for boxes.

Fuel now, and eventually.—We have shown that upwards of a thousand plantations can have wood in abundance in Texas. In Louisiana, one-fourth of the planters are now without wood, except drift, or wood rafted from a distance; one-half are rapidly exhausting their wood, and have to go from three to six miles, into the very worst of swamps for it. They are also compelled to dig canals, costing from \$2,000 to \$20,000, to enable them to get it out. Should we have to depend upon rafts, the supply is at hand, for all the rivers of Texas are well wooded, up towards their heads, and in the freshets, its rafts can be sent down as cheaply as on the Mississippi. Coal can be got something cheaper in Louisiana, if necessary. Our mineral resources in Texas are not yet well ascertained.

Prospective advantages, such as appreciation, etc.—Any good sugar lands purchased in Texas at a price within \$5 an acre, will become, in five years, worth \$20, and more, if improved. The natural tendency in the states to equalization in prices, with reference to all the facilities of position, is certain, and a balance becomes struck, by the operation of things, crediting the one with the advantages, and debiting the other with all the inconveniences. Investments, therefore, in Texas sugar lands would be better and more certain than in any other species of property, and the appreciation would be at least one hundred per cent. in from three to five years.

Dividends on Capital.—If a given sum, say \$100,000, in Louisiana, gives six or ten per cent. per annum, a fortiori, \$30,000 in Texas, accomplishing fully as much, would, under the superior advantages, give 20 or 30 per cent. per acre. This is a moderate estimate.

Expenses of a Plantation, preparatory and annual.—The heavy ditching, levying and draining, in Louisiana, will exceed the same in Texas, five times; cost of provisions and teams, all of five times; fuel, twice as much. The preparatory expenses of a plantation in Louisiana, therefore, will be for the above preparations of draining, canaling, levying, all of three times as much as in Texas. If these improvements are already made, they must be paid for in the advanced price of lands, being about \$100 per acre. I would then say, one-half the expense can be saved in the start in Texas, while the annual expenses are not more than one-third as much as in Louisiana.

Development hereafter.—Within the last twelve years, a population of five millions, from Virginia, the Carolinas, Georgia, Tennessee and Kentucky, have settled up to fullness the Cherokee and Creek country of

Georgia, Florida and Alabama, forming half of those states, all the western district of Tennessee, being a full third of the state, more than half of Mississippi, half of Louisiana, half of Arkansas, all of Missouri, and the Red River side of Texas. Now, with an increased population in all these states, of 8,000,000, and half of all their lands fully exhausted, may we not safely calculate that the stream of emigration, urged on by the present eagerness for sugar planting, and the important fact (that will soon be known and appreciated) that Texas contains more than half the sugar lands in the Union, will settle the balance of Texas and Arkansas as fully in two or three years hence, as the other states are now settled.

The large slave-holders are very restless in all those states. They have been investing in Louisiana and the Mississippi swamps, until uncultivated lands are worth \$40 per acre. They will next make a rush at lower Texas, and a rapid development will soon take place to the astonishment of all. Lands will rise, as we have said, one hundred per cent. in a few years, and all advantages, facilities and inconveniences, will be distinctly understood and acted upon. The enterprise of Americans will insure this—prejudice must yield to facts.

These remarks have been elicited by an article that lately appeared in De Bow's Review, which asserts that Texas can never be the rival of Louisiana in sugar, for the want of fuel, and also, because the cane will not ratoon in Texas. The article cites the authority of Judge Rost, and of Mr. Marsh, of Attakapas. The writer of this is a citizen of Mississippi, who, though he has not yet any interest in Texas, has had ample opportunities of attesting its great advantages as a sugar country, and he is willing to submit the statements above made to the severest test, for a confirmation of their truth.

TEXAS—ITS RESOURCES, LANDS, RIVERS, PRODUCTS, ETC.—*Resources*—Texas embraces so vast a scope of country possessing so great a variety of soil and climate, and is so diversified by hill and dale, high woods and level plains, that every taste can be suited and every description of agricultural labor be successfully prosecuted. The capacity of Texas, as a sugar and cotton-growing region, has been briefly noticed in our former articles. We now beg leave to call attention to that particular section of the state lying north of the cotton district proper. This section is neither small nor unfruitful, but has as yet been but little disturbed, except by marauding Indians, who gallop over the prairies in search of the buffalo, occasionally scalping a party of hunters or Santa Fe traders, who are too weak for defence, and sometimes making an excursion into the

"settlements" for the purpose of stealing horses and scalps.

A few hardy pioneers, fond of adventure, and impatient of the restraints of civilized society, have sought scenes and events congenial to their rough natures and rude tastes, by penetrating far into the frontiers, where the wolf's howl and the panther's scream are their favorite music, the elk's haunch their delicacies, the buffalo-skin their bed, and the savage red-skin their companion. But little has been done toward testing the capabilities of the country for agricultural purposes, above where cotton has been successfully grown, but enough is known to settle its character as a fine grain-growing country. There is a portion of the cotton region, where small grain has been experimented on with the most encouraging success. All of what are denominated the Red River counties, all the country from that to the upper Trinity, extending two hundred miles on that stream above and below the three forks, reaching beyond the Cross Timbers, is a scope of country of surpassing fertility, and pronounced by the best judges superior to Missouri as a wheat country. Between the Red River and Upper Trinity, there is a larger body of rich land, without any admixture of poor, than can probably be found elsewhere on the continent of America. This description of country extends to most of the Trinity, taking in the Navissotto, Brazos, Colorado, and sources of the Guadalupe, with occasional interruptions, to our western boundary. Some of the tributaries of the Colorado are represented as surprisingly beautiful and rich; in the valley of the San Saba, grow luxuriantly, wheat, rye, barley and oats, in nature's form, planted by the same hand that planted the tree of life in the first garden, watched over by no eye but that which surveys the universe, and harvested only by the bison and the wild deer. The spontaneous productions of a soil is considered unmistakable proof of its adaptation to those productions—better intimations could not be given; it is the voice of nature untaught by the husbandman's art, speaking through her own acts, making indigenous that which is peculiarly suited to peculiar localities. If we regard this indication, then Texas, we must conclude, is pre-eminently adapted to the growth of small grain, since rye and other descriptions of grain grow in rich luxuriance over a territory as large as some of the European kingdoms, or states of the American Union.

Texas Stock and Prairies.—There is no portion of Texas but where horned cattle can be easier and cheaper raised than in any portion of the Union or the globe, except on the *pampas* of South America. In many portions of the state, the musket grass affords the richest and most enduring pasture that

the descendants of the bulls of Bashan ever luxuriated on. There the broad meadow stretches beyond the reach of vision, bounded only by the blue horizon, broken occasionally by a lazy stream or "dry bayou," with here and there a water-hole, and a small skirting of timber to mark its course. There innumerable herds of cattle, happier and prettier than ever were pastured by Virgil in his pastorals, enliven the otherwise oppressive loneliness of the scene. Other portions of the state are beautifully diversified with towering mountains and laughing valleys, with roaring rapids and smooth gliding streams, presenting to the eye some of the loveliest scenes that Nature, in her most fanciful moods, has ever marked out. These, too, are covered with the richest, sweetest herbage, and variegated with innumerable wild flowers of every hue and form. The hilly portion of the country is admirably adapted to sheep raising, as some experiments have fully demonstrated. Sheep-raising gives fine returns upon invested capital, as has been tested upon the rolling lands of Texas, and we hesitate not to believe that ours will, before a great while, be one of the finest wool-growing states in the Union; our belief is founded on the fact, that sheep are found to be very healthy and multiply very rapidly, and like almost all other descriptions of stock in Texas, can be reared without expense.

Many of the river bottoms of this state afford the finest winter grazing in the world. Not such as is found in many other southern bottoms, consisting of tall reeds covered with an evergreen foliage, on which cattle may browse, and sustain life until the coming spring carpets the highlands with its vernal covering, but affording pasture of a widely different character. On the Trinity are extensive gamma-grass prairies; the Brazos furnishes a species of wild rye, where the bison, the elk and the wild horse feed and fatten through the entire winter. In Texas, it is never thought necessary to feed any description of stock, but such as are kept in constant service, so bountifully has nature provided for their wants the year round.

There is another description of stock that succeeds admirably. It has for years been tacitly conceded, that it was the peculiar province of the western country to supply the American market with pork, and the metropolis of the West has been a great "swinish" emporium, on which every section of the broad Union might draw *ad libitum*. But no portion of the entire country can successfully rival portions of Texas, in this very important item in the provision market, either in the quality of the article or in the cheapness of its production. A few grains of corn thrown to the porkers to keep them gentle, being all that is necessary un-

til the fattening process is commenced, which is generally effected by turning them upon the pea field, after the maize is harvested, or to glean in the sweet-potato patch.

Texas Sugar Lands.—As a sugar-growing country, Texas is unequaled by any portion of Louisiana. True, in Louisiana they have rich alluvial soils, and the mighty Mississippi bearing upon its bosom the commerce of half the Union, favoring the occupants of its shores with hourly intercourse with the metropolis of the South. But that portion of Texas where sugar has been successfully raised, and which will be distinguished as the sugar region, possesses advantages and facilities for the production of the article, unknown to any portion of Louisiana. The soil of the lower Brazos, San Bernard and old Caney, will bear a favorable comparison with the parishes of Terrebonne and Lafourche Interior, whether the test is made the yield per acre, or in the chemist's laboratory. In Texas there is no fear of crevasses and inundations. The planter here is never under any apprehension of having his crops wept off with the flood. Here, too, at no expense, and but little trouble, the planter raises his own pork and the oxen for his teams. The land here is unrivaled in the production of corn by any southern soil—from forty to sixty bushels to the acre being an ordinary yield—enabling the planter, with little trouble, to supply himself with this indispensable article at no cost. Another important consideration for the man who intends to embark in the sugar business—while land in Louisiana costs from thirty to sixty dollars the acre, a better quality of land may be had in Texas for five and eight dollars.

We have not instituted this comparison, for the purpose of disparaging Louisiana. It is well known, its character as a superior agricultural region is established and its advantages appreciated—those of Texas but partially known.

We know not the precise amount of the sugar crop of Texas the present year, nor the amount of land on which it has been raised, nor yet the largest amount produced on a single acre, but the result of the past year's crop has been entirely satisfactory to those engaged in it, and so encouraging as to induce the planters, generally, in the four counties of Brazoria, Fort Bend, Matagorda and Wharton, to engage in its culture, and to draw attention to this section as particularly well suited to the production of this article. We do not pretend to say, that the section above specified is the only portion of the state where the sugar culture will be found profitable; there are lands of great fertility, and admirably situated for this branch of business, on the lower Trinity, on the San Jacinto, the Lavacca and the Guada-

loupe, that will soon attract public attention, and be converted into profitable sugar plantations. A vast amount of the richest land in the Union now lies in Texas, untouched by the hand of the husbandman, in lower latitudes than any portion of the United States, save Florida, offered at a mere nominal price. Now is the favored moment for procuring a good sugar plantation in Texas, for the land must inevitably, in a short time, command ten times its present price.

Texas Navigation.—It is quite fortunate for the residents on Trinity and Brazos, that they now enjoy the facilities by the pioneer steamers, which have lately commenced a new era here, in the transportation of merchandise to the interior, and their products to a market. Three small steamboats now ply upon each of these rivers advantageously; besides, the staunch steamer Ogden makes weekly trips between Columbia, on the Brazos, to the islet city of the gulf, Galveston. But the unfortunate citizens of the Colorado valley, though favored with the noblest river in the state, are doomed, for years to come, to plod their weary way through the prairie mire, and mud, and boggy bottom, to reach anywhere. They have long addressed their prayers to Hercules; they are like those of the ancient wagoner, of no avail, until he put his shoulder to the wheel, when the application proved successful. It is now twelve years since a charter was granted, by the Texan congress, to remove obstructions to navigation in that river—the principal being the raft, a few miles above Matagorda. The steamboat Kate Ward, some years since, ascended the Colorado as high as Austin, the capital of the state; and by a trifling expenditure upon the river above that place, the navigation, it is asserted, may be extended one hundred and fifty or two hundred miles further by steamboats, such as are at present employed on the Trinity and Brazos. The towns upon these streams already feel the cheering impulse of the first energetic effort, and a determined improvement is evinced by all. Success is ever the result of putting the shoulder to the wheel—it must roll onward.

TEXAS.—THE BRAZOS COUNTRY.—I have recently visited that portion of Texas above Huntsville, between the Brazos and the Trinity rivers, as far up as the Three Forks of the Trinity, which, until since annexation, has been the range of the buffalo and the Indian. It is now being laid off into counties of 900 square miles, and is settling rapidly. In the upper counties none of the settlements are more than three years old, yet most of them already have established churches and schools. Some of the schools are very promising.

The land above Walker county is, for the

most part, open, gently undulating prairies, covered with rich grasses, undisturbed by man or beast since the buffaloes have left, which was since the commencement of the settlements. Springfield and Tyworrana, (no two persons spell this name alike,) in Livingston county, are good places to select as residences. The last presents one of the most lovely and extensive prospects I have ever seen in this state, or, indeed, in any other. The soil is of the first quality, and the water abundant, pure, and good. There is also an abundance of excellent building stone and cedar timber, near at hand, for fences. It is destined to become a place of importance as a healthful and delightful place of residence, combining, with the extensive cattle range, advantages to the emigrant greatly to be desired. As I proceeded northward, I found the same excellent quality of land, with a convenient amount of timber, throughout Navarro county to Porter's Bluff, on the Trinity. In some parts of this country the water was bad and scarce: the health of the people suffered in consequence. From about 15 miles north of Porter's Bluff, in Ellis and Dallas counties, although the soil appeared much the same as in the counties below, there is a sub-stratum of a white, soft clayey rock, which is easily cut with a saw, and which can hardly be made available for building purposes if exposed to the weather, but which may be made to stand by giving it a coat of plaster. Wherever this rock was found was also found an abundance of springs, and water may also be obtained by digging a few feet, say from 12 to 20. I traced this rock from Dallas to this place, a distance of 175 miles. The whole country has much the same features; a gently undulating open prairie, soil generally rich, and with but little land of no account, greatly deficient in timber, except along the Trinity and Brazos rivers; everywhere presenting prospects of great beauty and a healthful climate—where, besides having an abundant range for stock, wheat, rye, barley, oats and corn can be raised with little labor, and the whole of this vast region the best of upland cotton.

The planters in the South and West who are not well situated where they now are, cannot fail of being suited here, except they wish to grow sugar-cane. Many might come also from the North, especially mechanics, and do well, if they can be conservative enough to mind only their own business. One thing I had well nigh forgotten to say is this, that this country literally abounds with "milk and honey." Honey is raised without scarce an effort, and of the best quality. It is no fiction that, during the late dry weather, the honey dew has laid so thick upon the grass as to stick upon your clothes when you walked through it—often killing the grass, and, in some instances, so smearing the wings and feathers of the prairie hens that

they have been caught by the hand. This last fact I have learned from others, not from my own observations. The grass killed by this dew I see daily. So the bees fill their hives almost without effort, at least that is the case this season.

After crossing the Brazos at Waso Village, and proceeding to the head-waters of Little River, a change comes over the face of the country on your right. On the left, to Austin, is the same beautiful prairie country; but near at hand, on the right, the country becomes rocky and wooded—on the San Leon, Lampases, and Salado; and between these beautiful streams, which, by-the-by, are as clear as crystal, and abound with fine fish, easily caught. These streams are formed from large springs, and afford numerous excellent mill sites not subject to irregularity and overflows. On the white, soft clay rocks, of which I have spoken above, lie other rocks, much of it limestone, but also presenting many specimens of flint, crystals of various kinds, and many minerals. I have seen indications of sulphur, iron, lead, copper, silver, and some gold. It would be a rich region for a mineralogist to examine. The county seats of Bell and Williamson counties, Nolansville, and Georgetown, are in the midst of this region. At either of these places, a few good mechanics would do well to locate and grow up with the country. This whole line from Dallas to Austin (200 miles) is now frontier, with few or no settlements above. Locations are being made daily above, and will soon be occupied.

TEXAS—HER NATURAL ADVANTAGES—WOOL AND FACTORIES.—The resources of Texas are almost without end, and in the hands of her present population, we have an abiding hope that the best use will be made of those resources, and that Texas, one of the latest, is destined to become one of the brightest stars of the American Constellation. The following interesting article upon Texas wool and factories we extract from the New-Orleans Picayune :

The western section of Texas is admirably adapted to the purposes of the wool-grower. It is destined to be, in this respect, a formidable rival to the northern farmers. Particularly will this occur in the region back of the low lands on the Gulf coast. Even on these, however, where experiments have been made on a small scale, and the flocks partly of the poor Mexican breeds fed almost entirely upon the sea-weed thrown upon the beach, we know that the wool, when sent to the New-York market, was pronounced equal to the average quality of the article received from the northern folds, and brought very high prices.

Western Texas possesses every natural requisite to place it, as a wool-growing country, on an equal footing with New-York,

Vermont, and other states. The high-rolling country, the purity of the air, the continual supply of excellent nourishment in the musquito grass, the number of small streams, and, above all, the absence of deep snows and chilling blasts of northern winters, are her qualifications in this respect. The climate is not too warm, either, by which the fineness of the wool might be injured; there is sufficient bracing quality in the atmosphere to preserve the pristine vigor, even of animals imported from colder climates; and little care and less expense are necessary to keep the largest flocks of sheep in the best condition.

Indeed, this is the case with all kinds of stock in Texas, but chiefly in the western part of the state. Horses, cattle, &c., left to run free in the prairies and valleys, grow to the largest and most vigorous dimensions, and in the depth of winter present the appearance of stable-fed and well-groomed animals.

We have been led into this train of remarks by meeting an announcement in a late San Antonio paper, of a new and extensive woolen factory soon to be established within two or three miles of that city, on a branch of the San Antonio River. Woolen fabrics, of a substantial character, are to be manufactured—jeans, kerseys, blankets, satinets, &c. A substantial stone building has been erected for the purpose. The machinery has arrived, and consists of one Pekin and two carding-machines, of ninety spindles each, with three power-looms. The persons at the head of the enterprise are Messrs. Harper & Martin, of San Antonio, one of whom is stated to be an old hand at the business. It is the first establishment of the kind west of the Colorado, and will give a powerful impetus to the wool-growing business and the prosperity of Western Texas. The San Antonio River is surpassed by none of its size in its water-power for mills and factories. The wheat-raising and wool-growing capabilities of the country surrounding it, will doubtless soon lead to numerous trials of its velocity and volume of water for factory purposes.

Texas begins well, and has taken the right track. Let her avail herself properly of her great natural advantages—let her cultivate her own manufactures, and there will be no necessity for secession. She will acquire power by learning to depend upon herself, and, with power, her rights will be respected.

Let the whole South follow upon the same path. Western Virginia, by the way, ought to surpass Vermont as a wool-growing country. May we not hope that the time is near when she will avail herself of her great advantages in this respect?

TEXAS—GROWTH OF, ETC.—Much has already been written upon the growth and

prosperity of this flourishing state. Texas is no doubt destined, in the popular language of the day, to become the "Empire State of the South." When her present debt shall have been extinguished, as it speedily will be, I hope, to the satisfaction of all her creditors, and the balance of the ten millions appropriated to internal improvements, railroads, the clearing out of her rivers and harbors, and the purposes of education,—for which last, by the way, the state has already funded nearly a million of dollars—her resources will begin to be rapidly developed.

Texas is almost the only state in the Union having a diversity of soil and climate suited to the various products of our widespread country. Embracing in her territorial limits an area of several hundred thousand square miles, with several degrees of latitude and longitude, we find her producing, in one district, all the grains and fruits of the North, and in another, all the staples of the South, and the luxuries of the tropics. Cotton, tobacco, wheat, corn, rye, oats, potatoes, &c., in the northern range, and Red River district, of the 31st degree of latitude and upwards,—and sugar, cotton, tobacco, rice, and all the tropical fruits farther south.

At the battle of San Jacinto, Texas scarcely numbered ten thousand souls; she now has nearly *three hundred thousand*. She has upwards of one hundred organized counties, and is well supplied with newspapers and post-offices throughout the state. An intelligent traveler, who has made a recent tour to the Upper Trinity, "represents the emigration to that part of the country as far exceeding anything he had imagined. This immense influx of immigrants had produced the natural consequence of giving an unusual demand for provisions, and enhancing the value of land to an extent that is almost unprecedented. Lands which were offered last year for three or four dollars per acre, can now be sold readily for eight or ten; and such as could be had ten months ago for fifty cents per acre, can now be sold for two dollars in cash."

The Brazos plantations have been gathering a bale of cotton per acre, at the first picking, but since the heavy rains, the yield is much less. The sugar crop is, this year, very fine. Cotton and sugar will be much earlier to market than usual.

The city of Galveston, the island city, the chief commercial mart of the state, has a population of about 4,000 souls. She commands, at present, two-thirds of the state trade. Besides regular lines of steam packets to New-Orleans, she has a line of superior sailing packets to New-York and Boston, and it is in contemplation to run a line of steamers to New-York and Mobile. Ten emigrant ships are daily expected here, on

their way from Europe, with passengers and freight for Texas.

The domestic trade of Galveston, chiefly up the Trinity and Brazos rivers, for the past year, may be safely set down between two and three millions of dollars. In the course of another year or two, she will ship from this port eighty or a hundred thousand bales of cotton, equal to Natchez and Vicksburg in their palmiest days. Galveston is pretty well built for a new town, though it has nothing to boast of in the way of architecture, unless it be the cathedral, which might be regarded as an ornament in any city. "The log cabin era in Texas has nearly passed by, and people in the settlements and villages have fairly entered upon a style of architecture which may well be termed the *barn style*."

TEXAS—EASTERN.—I have recently visited the Red River country of this state, and as a description of it might interest your numerous readers, I submit the following :

Red River is navigable for 800 miles above the Raft, and is decidedly a safer and better river than below the Raft. I saw it at fifteen different points, and found it to be from 200 to 400 yards wide, with high banks, the bottom lands of superior quality, and what is remarkable, has never been known to overflow, except by the freshet of 1843. which was fifteen feet higher than the river was ever known to be before or since.

Bowie, Red River, Lamar, Fannin and Grayson counties, border on the river and embrace the richest lands in Eastern Texas. The country is greatly undulating, mostly prairie, but sufficiently interspersed with fine timber to make it decidedly convenient for establishing plantations. The country is but sparsely settled, and mostly by western people, who are engaged in raising stock ; and it is, doubtless, one of the finest stock countries in the world. It is not uncommon for two and three years old, to weight from 300 to 500 pounds, and sheep from 600 to 1000 pounds, at five years old. Sheep are 50 per cent. larger, and will produce 50 per cent. more wool than in Kentucky or Tennessee. It is at this time literally a "land of milk and honey." Nearly all the settlers have bees, and many of them raise from 300 to 500 gallons a year.

The few farmers who have turned their attention to cotton have succeeded remarkably well. There were 15,000 bales shipped this season, although not a half crop made. There is 25 per cent. more cotton planted this season than heretofore, and the ensuing crop above the Raft may be estimated at 30,000 to 40,000 bales. To give a correct idea of the Red River lands in cotton and corn, I give a few facts : Capt. T. G. Wright,

who plants in Red River county, informed me that he had measured a few acres and weighed the proceeds by way of experiment, the yield of which was 3,500 lbs. per acre. Capt. M. R. Roberts, in Fannin, told me his crop in 1847 averaged 3,300 lbs. per acre. Major G. M. Butts, in Grayson, informed me his average crops of corn were 50 bushels per acre, and 70 and 80 bushels were not uncommon in the county. 20 to 30 bushels of wheat may be regarded as a fair average.

I have never seen any part of the United States, where the land was so uniformly good. Plantations of almost any extent can be had in this country without a waste acre ; 10,000 acres could be had in one field in Coffus Bend, Grayson county, without a waste acre, and lying so well that a mule could be seen on any part of the tract, when cleared.

Owing to the raft in Red River, boats can only ascend above the raft for about three months in the year ; and the few which have been in the trade, have so monopolized the business, as to tax the planter with two or three dollars per bale freight. This, and other causes, have kept down the price of land in this part of Texas. The finest wild lands can be had at this time from fifty cents to one dollar per acre, and improved lands from two to three dollars per acre. The government is under the strongest moral obligation to the Choctaw and Chickasaw Indians, to give them navigation to New-Orleans ; this was promised them by the commissioners who formed the treaty. Surely, an object so important cannot be much longer overlooked. The country bordering on Red River, is capable of sending to your market 250,000 to 500,000 bales of cotton, annually, and would in a few years do so, if the navigation was good.

TEXAS—GALVESTON.—"While steamships of 1,200 to 1,500 tons, and sail vessels of 1,000 tons, can enter the port of Galveston, and take our produce to a foreign market, it is hardly probable that it will ever be sent circuitously by rail-roads, one thousand miles to Charleston, or by water still more circuitously and still further, to the same port, and that, too, merely for re-shipment. This is manifestly contrary to the natural course of trade. With the exception of a few counties bordering on Red River, the exports of Texas must find their outlet at our own ports ; and the day is not far distant when they will be sufficient to establish a direct foreign trade by regular lines of packets. Even with the late dismemberment, we have still a territory as large as Louisiana, Mississippi, Alabama, and Georgia together, and the amount of waste or unproductive land, we believe, is less ; while we have a larger amount of rich

alluvial bottom lands than all the other southern states. Texas is capable of producing more sugar than all the balance of the Union, including all the recent acquisitions along the Pacific coast. We have many millions of acres of land of inexhaustible fertility within the latitude adapted to the growth of cotton: while an extensive region in the upper part of our state has been proved to be an excellent wheat country, and well adapted to other small grains. For stock raising and wool growing, Texas is, probably, unequaled by any other country. While, therefore our state is as large as the four southern states above named, it is certainly capable of producing fully as much for exportation, as all those states together. Nor will it be many years, with the present rapid ingress of immigrants, before our exports will give employment to a very large amount of shipping."

TOBACCO—PRIZE ESSAY ON THE CULTURE AND MANAGEMENT OF.—The publisher of the American Farmer having offered a piece of silver plate of the value of \$30. for the best essay on the above subject, the committee, consisting of Messrs. H. G. S. Key, J. S. Sellman, George W. Hughes, John D. Bowling, and W. C. Calvert, of Maryland, awarded the prize for the following essay:

A rich loam is the soil for tobacco plants. The spot selected for a bed should be the south side of a gentle elevation, as well protected as possible by woods or shrubbery—a warm spot—mellow ground, perfectly pulverized. After a thorough burning of brush and tobacco stalks mixed, dig deep, and continue to dig, rake and chop, until every clod, root and stone be removed; then level, and pulverize nicely with the rake. Mix one gill of seed for every ten square yards, with a quart or half gallon of plaster, or sifted ashes to every half pint of seed, and sow it regularly, in the same manner that gardeners sow small seeds, only with a heavier hand. Roll with a hand-roller, or tramp it with the feet. If the bed be sown early, it ought to be covered with brush, free from leaves; but it is not necessary to cover them after the middle of March. Tobacco beds may be sown at any time during winter, if the ground be not too wet or frozen. The best time for sowing is from the 10th to the 20th of March, although it is safest to sow at intervals, whenever the land is in fine order for working. Never sow unless the land be in good order, for the work will be thrown away if the land be too moist, or be not perfectly prepared. The beds must be kept free from grass or weeds, until they are no longer needed, and the grass must be picked out, a sprig at a

time, by the fingers. It is a tedious and troublesome operation; therefore, planters should be very careful not to use any manures on their beds, which have grass seeds or weeds in them. After the plants are up, they should receive a slight top-dressing of manure, once a week, sown broadcast by the hand. This manure should be composed of half a bushel of unleached ashes, or one bushel of burnt turf, one bushel of fresh virgin woods earth, one gallon of plaster, half a gallon of soot, one quart of salt dissolved in two gallons of liquid from barn-yard, and four pounds of pulverized sulphur, the whole well intermixed. Let a large quantity be got together early in the winter, and put away in barrels for use when wanted. This, and other such mixtures, have been found efficacious in arresting the ravages of the fly—both from the frequent dusting of the plants, and the increased vigor which it imparts to them, thereby enabling the plant the sooner to get out of that tender state in which the fly is most destructive to it. The fly is a small black insect, somewhat like the flea, and delights in cold, dry, harsh weather, but disappearing with the mild showers and hot suns of opening summer. If possible, the plants should stand in the bed from half an inch to an inch apart, and if they are too thick, they must be raked when they have generally become as large as a five or ten cent piece. The rake proper for the purpose should be a small common rake with iron teeth, three inches long, curved at the points, teeth flat, and three-eighths of an inch wide, and set half an inch apart.

After-culture, etc.—The soil best adapted to the growth of tobacco is a light friable soil, or what is commonly called a sandy loam, not too flat, but rolling, undulating land, not liable to drown in excessive rains. New land is far better than old. Ashes are decidedly superior to any other fertilizer for tobacco. Theory and practice unite in sustaining this assertion. The land intended for tobacco should be well plowed in April, taking care to turn the turf completely under, and sub-soiling any portions that may be very stiff, and likely to hold water near the surface, and let the land be well harrowed directly after the breaking it up; it should then be kept clean, light, and well pulverized by occasional working with cultivators and large harrows, so as not to disturb the turf beneath the surface. When the plants are of good size for transplanting, and the ground in good order for their reception, the land, or so much as can be planted in a "season," should be "scraped," which is done by running parallel furrows with a small seeding plow (the Davis or Woods plow for instance), two and a half feet apart, and then crossing these again at right angles, preserving the same distance, which leaves the ground divided in checks or squares of two and a half or three feet each.

* By W. W. W. Bowie, Esq., of Prince George's Co., Maryland.

The hoes are then put to work, and the hill is formed by drawing the two front angles of the square into the hollow or middle, and then smoothed on top, and *patted* by one blow of the hoe. The furrows should be run shallow, for the hills should be low, and well leveled off on the top, and, if possible, a slight depression near the centre, so as to collect the water near the plant. The first fine rain thereafter, the plants should be removed from the seed-beds, and one carefully planted in each hill. A brisk man can plant ten thousand plants per day. The smaller or weaker hands, with baskets filled with plants, precede the *planters*, and *drop* the plants on the hill. In drawing the plants from the bed, and in carrying them to the ground, great care should be taken not to bruise or mash them. They ought to be put in baskets or in barrels, if removed in carts, so that not many will be in a heap together. The plants should never be planted deeper than they stood in the bed.

Planting is done by seizing the plants dropt on the hill with the left hand, while with one finger of the right hand a hole is made in the centre of the hill, and the root of the plant put in with the left, while the dirt is well closed about the roots, by pressing the forefinger and thumb of the right hand on each side of the plant, taking care to close the earth well about the bottom of the root. If sticks are used to plant with, they should be short, and the planter should be particular not to make the holes too deep. The plants should be very carefully planted, for if the roots are put in crooked, and bent up, the plant may live, but will never flourish, and perhaps, when too late to *replant*, it will die, and then all the labor will be of no avail. In three or four days it may be weeded out; that is, the hoes are passed near the plants, and the hard crust formed on the hills pulled away, and the edges of the hill pulled down in the furrows; this is easily done, if performed soon after planting; but if delayed, and the ground gets grassy, it will then be found a troublesome operation. After "*weeding*" out, put a tablespoonful, or a gill, if it be preferred, of equal parts of plaster and ashes well mixed, upon each plant. In a few days, say a week, or less time, run a small plow through it, going twice in a row. This is a delicate operation, and requires a steady horse and a skilful plowman, for without great care, the plants will be knocked up, or be killed by the working. In a week after, the *tobacco cultivator* or *shovel* must be used. These implements are well made by R. Sinclair, Jr., & Co., of Baltimore. Either implement is valuable at this stage of the crop. But once in a row is often enough for either cultivator or shovel to pass. The crop can now be made with their use, by working the tobacco once a week or ten days, for four or five weeks, going each time across the former

working. Any grass growing near the roots of the plants should be pulled out by hand. As soon as the tobacco has become too large to work without injuring the leaves by the swingle-tree, the hoes should pass through it, drawing a little earth to the plants when required, and level the furrows caused by the cultivator and shovel. Let this hoeing be well done, and the crop wants no more working. Care should be taken to leave the land as level as possible, for level culture is most generally best. When it blossoms, the best plants ought to be selected for seed; one hundred plants being enough to save for seed to sow a crop of forty thousand pounds. All the rest should be "*topped*" before they blossom; indeed, as soon as the blossom is fairly formed. It should be "*topped*" down to the leaves that are six inches long, if early in the season, but if late, top still lower. If the season be favorable, in two weeks after a plant has been "*topped*," it will be fit for "*cutting*," yet it will not suffer by standing longer in the field. From this stage of the crop, until it is in the house, it is a source of great solicitude and vexation to the planter. He is fearful of storms, of frost, and *worms*, his worst enemy—they come in crowds—"their name is legion"—and the "*suckers*" are to be pulled off, and the "*ground leaves*" are to be saved. The "*suckers*" ought to be pulled off when they get three or four inches long; they spring out abundantly from each leaf, where it joins the stalk. "*Ground leaves*" are those leaves at the bottom of the plant, which become dry on the stalk, and ought to be gathered early in the morning, when they will not crumble.

The *worms* ought to be pulled off and killed as fast as they appear, or they will soon destroy the crop. Turkeys are of great assistance in destroying these insects; they eat them, and kill thousands which they do not eat, for it seems to be a cherished amusement of the turkey to kill worms on tobacco—they grow passionately fond of it—they kill for the love of killing. There are every year two "*gluts*," as they are called by planters; the first attacking the plants about the time that they are one-third or half grown, the other comes on when the tobacco is ready for cutting. The first can easily be subdued with a good supply of turkeys, and if then they are effectually destroyed, the second *glut* will be very easy to manage, for it is the opinion of many intelligent and experienced planters, that the greater portion of the first *glut* reappear the same year as *horn-blowers*, and breed myriads. When the second army of worms make its appearance, the tobacco is generally so large that turkeys do but little good. The only method, then, to destroy them, is to begin in time, start when they are being hatched, and keep up a strict watch upon them, going over the whole field, plant by plant, and breaking the

eggs, killing such as may be seen, and by constant attention during each morning and evening, to this business alone, with the whole force of the farm, they may be prevented from doing much harm. When they disappear the second time, there is no more cause of trouble. For a full entomological description of the tobacco worm, and the easiest and most effectual method of rendering them comparatively harmless, I beg leave to refer the reader to a letter written to J. S. Skinner, Esq., by the author of this essay, and published in the Farmers' Library, in 1843. When the plant begins to yellow, it is time to put it away. It is cut off close to the ground, by turning up the bottom leaves and striking with a tobacco-knife, formed of an old scythe—such knives as often are used for cutting corn. Let it lay on the ground for a short time, to "*fall*" or wilt, and then carry it to the tobacco-house, when it may be put away in three different modes, by "*pegging*," "*spear*ing," and "*split*ting." "*Pegging*" tobacco is the neatest and best mode, yet the slowest. It is done by driving little pegs about six inches long, and half an inch or less square, into the stalk, about four inches from the big end of the stalk, and these pegs are driven in with a mallet, in a slanting direction, so as to hook on the sticks in the house. It is then put on a "*horse*," which, by a rope fixed to one corner, is pulled up in the house, and there hung upon the sticks, which are regulated at proper distances. A "*tobacco-horse*" is nothing more than three small sticks nailed together, so as to form a triangle, each side being three or four feet long. Spearling is the plan I pursue, because it is neat enough, and decidedly the quickest plan. A rough block, with a hole mortised in it, and a little fork a few inches from the hole, for the tobacco-stick to rest upon, one end being in the hole, with a spear on the other end of the stick, is all the apparatus required. The plant is then with both hands run over the spear, and thus strung upon the stick, which, when full, is taken to the house, and hung up at once. There are "*dart-spears*," like the Indian dart in form, and "*round spears*," either, however, will answer.

"*Splitting*" tobacco is admired by many, who contend that it cures brighter, certainly quicker, and less likely to *house-burn* or injure from too thick hanging. This mode is pursued easily, by simply splitting with a knife made for the purpose, the plant from the top to within a few inches of the bottom, before it is cut down for housing. Care should be taken not to break the leaves while splitting the stalk. The knife for splitting may be fully described by saying it is a miniature spade. It can easily be made out of an old scythe blade, inserted in a cleft white oak handle, with its edges bevelled off to the blade, so that it acts as a wedge to the descending knife. After the tobacco is split,

cut down, and carried to the house, it is straddled across the sticks and hung up. The sticks are generally supported by forks driven in the ground near the heap of tobacco, for greater convenience to the person putting on the plants.

Tobacco sticks are small round sticks, or are split out like laths, and are about one inch square, or one and a half inches square, usually larger at one end than the other, and they should be eight or ten inches longer than the joists of the tobacco house are wide apart. If the tobacco is of good size, six or seven plants are enough on a four-foot stick. When first hung up, the sticks should be a foot or fifteen inches apart. As the tobacco cures they may be pushed up closer. After a house is filled, some planters put large fires under it, as soon as it has turned yellow, and by hot fires it is dried at once, and does not change color, unless to increase its brightness; but "*firing*," gives a smoke, smell, and taste, that is therefore not much liked by buyers. The cost of labor and loss of wood, and the risk of losing tobacco, and the house too, are great objections well urged against *firing*. The better plan is, to have sufficient house-room, and hang it thin in houses not too large, which have windows and doors so as to admit light and dry air, and by closing them in bad weather, exclude the rain and dampness, which materially damage the tobacco, besides injuring the color of it. After becoming dry and well cured, the stem of the leaf being free from sap, the first mild damp spell of weather it will become soft and pliant, and then be stripped off the stalk. It is first pulled or taken off the sticks and put in piles, then the leaves are stripped off and tied in bundles of about one-fifth or sixth of a pound in each. The bundle is formed by wrapping a leaf around the upper part of the handful of leaves, for about four inches, and tucking the end in the middle of the bundle, by way of confining it. There ought, if the quality of the crop will permit, to be four sorts of tobacco, "*Yellow*," "*Bright*," "*Dull*," and "*Second*." When the tobacco is taken down, the "*cullers*" take each plant and pull off the defective and trashy ground and worm-eaten leaves that are next to the big end of the stalk, and then throw the plant to the next person, who strips off all the *bright* leaves, (and if there be any yellow leaves, he lays them on one side until he has got enough to make a bundle,) and throws the plant to the next, who takes off all the rest, being the "*dull*;" and the respective strippers, as they get enough leaves in hand, tie up the bundles and throw them separate for convenience in bulking. Stripping should never be done in drying, or harsh weather, unless the tobacco is bulked up almost as fast as it is stripped. The best plan is not to take down more than

you can conveniently tie up in a few hours; but if the planter chooses he may take down a large quantity and put it in bulk, stalks and all, cover it with tobacco sticks, and it will keep many days, so that, no matter how the weather be, he can strip out of the bulk. However, this is a very bad, wasteful way. Tobacco should not be too moist, or "*high*," as it is termed, when put in the stalk bulks, or it will get warm, the leaves stick to the stalk, get a bad smell, and change color; besides, if left too long, it will rot. To "*bulk*" tobacco requires judgment and neatness. Two logs should be laid parallel to each other about thirty inches apart, and the space between them filled with sticks, for the purpose of keeping the tobacco from the dampness of the ground. The bundles are then taken, one at a time, spread out and smoothed down, which is most conveniently done by putting it against the breast and stroking the leaves downward smooth and straight with the right hand. It is then passed, two bundles at a time, to the man bulking. He takes them, lays them down, and presses them with his hands; they are laid, two at a time, in a straight line—the broad part of the bundles slightly projecting over the next two, and two rows of bundles are put in a bulk, both rows carried on together, the heads being on the outside and the tails just lapping one over the other in regular succession. The *bulk*, when carried up to a convenient height, should have a few sticks laid on the top to keep it in place. It must often be examined, and if getting warm, it ought to be immediately changed and laid down in another bulk, of less height, and not pressed as it is laid down; this is called "*windrowing*;" being loose and open, it admits the air between the rows of bundles, hence the term. The next process in this troublesome but beautiful crop, is to "*condition*" it for "*packing*." The *bright yellow* and *second* tobacco will condition best most generally in such bulks as I have just described, but it is best to hang up the *dull* as soon almost as stripped. If the bright or seconds do not dry thoroughly in the bulks, that should also be hung up in the house to become well dried. To properly hang up tobacco to condition, small-sized sticks should be procured, and each one nicely smoothed with the drawing-knife, and kept for that purpose. After it has once been perfectly dry either hanging up or in bulks—so dry that the heads are easily knocked off, and the *shoulders* of the bundles crack upon pressure like pipe-stems—it should be taken down, or, if in bulks, removed the first soft-giving spell of weather, as soon as it is soft and yielding enough, as it will become, to handle without crumbling or breaking, and it must be put in four, six, or eight row bulks of any convenient length and height,

the higher the better—laid down close, so that as little of the leaves or shoulders as possible shall be exposed on the outside of bulks. When completed, put sticks and logs of wood, &c., &c., on the top, so as to weigh it down. Here it will keep sweet, and in nice order for packing at any time, no matter what the weather may be; if it was conditioned properly, it will not change a particle while in the *condition bulk*. Mild, soft, pleasant weather is the best to pack tobacco in. The best tobacco prize is one known as "*Page's Prize*," but was first invented by the Rev. Mr. Aisquith, and improved afterwards by Page, at the suggestions of practical planters. It is very cheap, expeditious in its working, and being easily taken down and put up, may with convenience be moved from house to house.

As to the size of the hogsheads, the best size is the ultimatum of the law, forty inches in the head, and fifty-two in the length. Almost any wood will answer to saw into hoghead stuff; the best, of course, is that which is strong, but weighs light, such as gum or beach, or birch or poplar. No hoghead ought to weigh over one hundred pounds, and staves drawn out of red oak, or other oaks, which make the best hogsheads, but are too costly, ought not to weigh over ninety pounds.

Having now got our tobacco in good order, our prize and hogsheads ready, the first mild day that we can spare, we proceed to *packing*. Let me here observe, that while putting the tobacco in condition bulk, all the bundles that were *soft*, or had an ill smell, ought to have been laid aside to be made sweet and dry, by a few hours' exposure to the sun. The same precaution *must* be observed while packing. In putting the tobacco in the hoghead for packing, a man gets inside, *shoes off*, and lays one bundle at a time, in a circle, beginning in the middle, and each circle is extended until the outer circle touches the staves of the hoghead; a single row of bundles is then laid all round the edge, on the heads of the last circle, then across the hogsheads, in parallel rows, the middle being always raised a little higher than the outer edge. This is called a *course*, and these *courses* are continued until the hoghead is filled. The man who is packing, presses with his knees, each bundle, in each course, as he lays it, and often stands upon his feet, and tramps heavily, but cautiously, all around and across, so as to get in as much as possible. One receiving hoghead, and two false hogsheads, five feet long, making fourteen feet four inches of tobacco, will weigh from nine hundred to one thousand pounds, if well hand-packed, and in fine order. This concludes the almost ceaseless round of labor that is necessary to prepare for market this important staple of our country. It will be seen that I have endeavored to be as explicit and plain as possible,

and have studied the greatest simplicity of style, supposing that to be the most suitable to the subject under consideration.

Planters in Maryland should grow less tobacco, and thereby improve its condition and quality. By that means they would require less house-room, fewer hands, less land, and receive more money for what was made. It is no uncommon occurrence for planters to fall short, say 15 or 20,000 pounds in a large crop, yet receive more money for the residue than they got for the additional 20,000 lbs. the year before. The reason is, that *not* being pressed for room, it cured better, and they managed it better throughout its various stages, and consequently got a greatly increased price for it. That, too, is one reason why small crops invariably out-sell large crops, by several dollars per 100 lbs.; the other reason is, that small crops are rarely subject to drafts that must be met, even if it be by forced sales. As a striking instance of the uselessness of pursuing a practice of *overcropping*, which too many of the largest planters are constantly following to their great loss from year to year, and to the detriment of their neighbors by glutting the market with *trash*, I will mention a circumstance which made an impression on me the past year. Two gentlemen had each very fine crops of tobacco, so equal in appearance that there might be said to have been no difference in the product per acre as it stood, just when fit to top; but one had 220,000 hills, a small force in proportion to his crop, and scarce of room, having to haul some of it two miles to a neighbor's house. The other had only 160,000, plenty of room convenient to the tobacco ground, and a large number of hands to manage it. The latter gentleman made several thousand pounds more than the first, and it will average a larger sum per 100 lbs., taking the crop through. The reason is obvious: for in this crop every leaf was saved, none lost by worms, nor by "*house-burning*," (that is, suffering, or even *rotting* from being hung too thick,) nor lost by distant transportation; nor by that unavoidable waste which is the sure accompaniment to hurry and overwork in the securing of any crop. To all these disadvantages and losses the other crop was subjected.

One word more, by way of advice to the planters, will not, I hope, be considered out of place here. *Never draw a draft upon the tobacco which you consign to your commission merchant.* Fix a value upon it yourselves, and refuse to take less for it than you think it worth, unless you are necessitated to sell, and then sell before it be known that you are compelled to sell. The chief rule of the *buyers* of tobacco is, I believe, in fixing the *price*, not founded upon the European demand, but the demands of the planters upon

their merchants through the banks; and by that means the buyers are constantly kept advised of the necessities of the planters as individuals as well as a community, and they reduce the price of the article according to the urgency of the wants of the planters. I think it would be advisable, at least a safe *experiment*, for a sufficient number of the largest planters to establish an agency in some European market, and charter a vessel annually to take out their crops. The agent should be a practical planter, and be also an American citizen. His agency should cease at the farthest in five years, lest he become contaminated, and commence speculation on his own hook, as is too often the case with our commission merchants, who both buy for the *consumer* and sell for the *producer*, yet maintain their integrity, although no doubt it is sometimes inconvenient to the *conscientious*, who perhaps find a stumbling-block in their religious pathway.

I conclude with expressing the hope that this humble essay may be favorably received by the planters of Maryland; and should any of the suggestions it contains be found of value hereafter to any individual, the highest gratification will be experienced by the author; and he will feel himself amply compensated for his labor and trouble, by the delightful reflection that he had contributed a small share to the advancement of the great planting interest, and thereby been of some use to his countrymen.

TOBACCO—CUBA.

NEAR VICKSBURG, MISS., Dec. 22, 1849.

DEAR SIR,—I intended to send you a full account of our success in raising Cuba tobacco in this state, but absence from home, until too late for your report, prevented me. There is a considerable quantity raised here, but it is in small lots of half to one acre, and all made into *regalia* cigars, and sold in this state. They sell from \$15 to \$30 per M., the price depending principally on the care and attention given in the curing, &c. I have realized the latter price for mine the last two years; I pay five dollars per M. for making, and board the hand. A good hand will make from 200 to 250 per day, and boxes holding 100 cost 5 cents. each. 100 lbs. of tobacco will make about four thousand cigars. An acre will produce about 600 lbs. of this tobacco; it generally nets me in this way about \$1 per pound.

The crop of this state, I am confident, is not one-half that of last year, owing to the worm being worse than ever was known; and most persons raising it being cotton planters, who were all badly in the grass, the tobacco patch was neglected.

Owing to the causes above stated, it is impossible to form an estimate of the actual amount raised in the state, but I think the

next census will cause many to open their eyes with astonishment.

If you have on hand any seed of choice kinds of tobacco, (especially *Persian*, the kind *Bengal cheroots* are made of, or *Brazilian*,) and will forward me a small quantity of each, I will esteem it a great favor, and send you an account of my experiment with them, in time for your next report.

Most respectfully yours, &c.,

R. Y. ROGERS.

TOBACCO—GROWTH AND CONSUMPTION OF IN THE UNITED STATES.—The census returns of the Federal Government give the number of pounds of tobacco grown in the United States for the year 1850, and comparing this return with that of the year 1840, there is an apparent falling off in the production of tobacco, while the consumption has gone on to increase not only in proportion to the number of the population, but in a greater ratio per head. These facts are derived from the joint returns of the treasury department and the census. First, in relation to growth, we have the following results :

POUNDS OF TOBACCO RAISED IN THE UNITED STATES, PER CENSUS.

States	1840. lbs.	1850. lbs.
Maine.....	30.....	—
New-Hampshire.....	113.....	50.....
Vermont.....	585.....	—
Massachusetts.....	64,955.....	119,306.....
Rhode Island.....	317.....	—
Connecticut.....	471,657.....	1,383,932.....
New-York.....	744.....	70,322.....
New-Jersey.....	1,922.....	—

	1841.			1851.		
	Import	Export	Net import	Import	Export	Net import
Unmanufactured.....	lbs. ....	.....	—	4,029,921.....	275,288.....	2,754,633.....
Snuff.....	lbs.	545.....	545.....	1,498.....	8.....	1,490.....
Cigars.....	M.	73,899.....	4,852.....	218,792.....	8,445.....	210,347.....

If we now take the weight of the cigars at five pounds the thousand, which is the official allowance in France, we have for the

States	1840. lbs.	1850. lbs.
Pennsylvania.....	325,018.....	857,619.....
Delaware.....	272.....	—
Maryland.....	24,816,012.....	21,199,281.....
Dist. of Columbia.....	55,550.....	15,000.....
Virginia.....	75,347,106.....	56,516,492.....
North Carolina.....	16,772,359.....	12,058,147.....
South Carolina.....	51,519.....	73,235.....
Georgia.....	162,894.....	420,123.....
Florida.....	75,274.....	982,584.....
Alabama.....	273,302.....	163,605.....
Mississippi.....	83,471.....	48,349.....
Louisiana.....	119,824.....	23,922.....
Texas.....	—	60,770.....
Arkansas.....	184,439.....	224,164.....
Tennessee.....	29,550,432.....	20,144,380.....
Kentucky.....	53,436,909.....	55,765,259.....
Ohio.....	5,942,275.....	10,489,967.....
Michigan.....	1,602.....	2,225.....
Indiana.....	1,820,306.....	1,035,146.....
Illinois.....	564,326.....	844,129.....
Missouri.....	9,067,913.....	17,038,364.....
Iowa.....	8,076.....	2,012.....
Wisconsin.....	115.....	768.....
California.....	—	1,000.....
Minnesota.....	—	—
Oregon.....	—	325.....
Utah.....	—	—
New-Mexico.....	—	1,118.....

Total.....219,163,319.....199,532,494

There is a considerable increase in the product of Connecticut seed leaf, but in most of the other states, particularly Virginia and Louisiana, there was a marked decline, corresponding with the exports of the following years, thus testing in some degree the accuracy of the census reports. With this basis for internal growth, we have the data for estimating the consumption per head in the United States for the year 1850, as compared with the year 1840, and the figures are thus :

net importation of 1840 a weight of 346,035 pounds, and for 1850, 4,807,858 pounds. We then construct the following table :

	1840. lbs.	1850. lbs.
United States Growth of Tobacco.....	210,163,319.....	199,532,494.....
Exports—		
Leaf.....	177,393,600.....	115,134,000.....
Manufactured.....	7,503,644.....	7,235,358.....
Snuff.....	68,553.....	37,422.....
Total exports.....	184,965,797.....	122,406,780.....
Leaves.....	34,197,522.....	77,125,714.....
Add net import.....	346,035.....	4,807,858.....
United States Consumption.....	34,543,557.....	81,933,571.....
United States Consumption per head.....	2 lb. $\frac{3}{4}$ oz.	3 lb. 8 oz.

We may compare the consumption in the United States, France and Great Britain, according to the latest returns :

CONSUMPTION OF TOBACCO.

	Pounds.	Population.	Per Head.
United States.....	81,933,572	23,080,972	3 lb. 8 oz.
France.....	40,943,088	35,400,486	1 lb. 2½ oz.
Great Britain.....	28,062,978	27,435,325	1 lb. 0½ oz.

In France very little tobacco is used for mastication, and in the government returns the quantity so sold is included in the smoking. The quantity actually sold in France by the *regie* was as follows :

	Kilogrammes	lbs.
Snuff.....	6,774,561	14,914,034
For Smoking.....	11,112,314	24,447,091
Cigars Imported.....	175,013	437,532
" Made in France..	520,196	1,144,431
Total.....	18,582,084	40,943,088

In England larger quantities are used for mastication, as in the United States, but there are no data to determine the proportions. The large quantity used in the United States, as compared with the other two countries, shows the influence of taxation in preventing consumption, even of an article on which the highest tax amounts to but a small sum per annum. Thus in England, the tax is 74 cents per pound, and if the consumption were raised to the level of that of the United States, it would make a difference of but \$1 60 per annum for the use of a luxury. If the English government were to reduce the tax one-half, say 37 cents, the consumption would thereby at least be doubled, and which would yield a greater revenue, while it would diminish the cost of the preventive service, and remove the vexatious risks and delays to which vessels are now subjected. The penalty for smuggling a few pounds of tobacco by a seaman being forfeiture of the ship. In France the sale of both native and foreign tobacco, is the monopoly of the government, and that monopoly has recently been prolonged to 1863, much to the injury of the French tobacco growers, as well as of the foreign trade. If those governments should see fit to modify these restrictions, the above table shows at a glance how great would be the influence upon the demand. The difference between what the French government pays for all its tobacco, and what it costs the consumers, constitutes the tax, and this is as follows :

Cost of Tobacco.....	46,099,850fr. or \$8,643,721
Gross Sales.....	132,060,930fr. or \$24,762,990
Net Profit.....	85,961,089fr. or \$16,119,269

This gives about 40 cents per pound, but a fraction of this constitutes the profits of the retailer appointed by the government. The actual tax of the monopoly is about 30 cents.

A brief statement of the commencement and progress of the cultivation of, and trade in tobacco, will be useful not only to show

how rapidly it progresses, but to exhibit in one paper and at a glance, its beginning, growth and perfection, at least so far as it regards foreign trade. For many of the facts embraced in the early history we are indebted to a friend, formerly one of the most distinguished merchants of Philadelphia, but who retired early with a moderate competency, the reward of his skill and industry, not to trifle away the remainder of his life in idleness nor waste it in the pursuit of amassing wealth, but to devote himself to scientific acquirements, and he has attained, as a naturalist, an eminence no less enviable than was formerly his position as a merchant.

In the early accounts of the plant we find a letter of the governor and council of Virginia, dated James' City, January 20, 1622, which says, "that there was not above 60,000 pounds made in the colony, but in 1639, only 17 years afterwards, the Grand Assembly passed a law which recites that "Whereas, the excessive quantity of tobacco of late years planted in the colony, has debased the quality," and enacts "that all the tobacco planted this present year, and the two succeeding years, in the colony of Virginia, be absolutely destroyed and burned, excepting and reserving so much in equal proportion to each planter, as shall make in the whole the just quantity of 120,000 lbs. of tobacco, stripped and smoothed," &c. In consideration whereof, the creditors of the planters were compelled to "accept and receive 40 lbs. of tobacco, so stripped and smoothed, in full satisfaction of every 100 lbs. now due them." It is not important to ascertain whether this law was re-enacted at the end of the three years named in it ; for we find in an official report to the commissioners, that the yearly exports of tobacco for ten years ending in 1709, were 28,858,666 lbs., of which 11,260,659 lbs. were annually consumed in Great Britain, and 17,598,007 lbs. in other countries of Europe. In 1744-5 and 6, the average annual exportation was 40,000,000 lbs., of which 7,000,000 lbs. were consumed in Great Britain, and 33,000,000 lbs. in other European countries. The annual average of exportation from 1763 to 1770, both inclusive, was 66,780 hhd., of about 1,000 lbs. each, or 67,780,000 lbs. As we have now approached the period when the exportation of tobacco arrived at a point from which it has vibrated, (sometimes a little above or below it,) we subjoin a statement of the exportation for the years 1772-

3-4-5, inclusive, which will furnish the remarkable fact that (compared with any succeeding four years since that period) the annual exportation of tobacco, just before the Revolution, was about the same that it has been at any time since, prior to 1840, in

our most prosperous periods. For, although 1790-91-92 were three years of very heavy exportation, they fell off in 1793 nearly one-half, making the annual average exportation not materially different from 1772-3-4-5.

STATEMENT SHOWING THE QUANTITY OF TOBACCO EXPORTED FROM THE UNITED COLONIES FROM 1772 TO 1775, INCLUSIVE.

Years	Pounds Exported	Pounds consumed or remaining on hand in Great Britain	Pounds consumed or remaining on hand in other countries of Europe
1772.....	97,799,263.....	97,791,805.....	7,458
1773.....	100,472,007.....	3,695,564.....	96,776,443
1774.....	97,397,252.....	18,698,337.....	78,676,915
1775.....	101,828,617.....	27,623,451.....	74,205,166
	397,497,139.....	147,809,157.....	249,665,982

The total exportation for the four years, 397,497,139 lbs. or an annual average of 99,374,785 lbs. This brings up to the period

of the Revolution. The following will exhibit the exportation of the article during that period :

STATEMENT SHOWING THE QUANTITY OF TOBACCO EXPORTED FROM THE UNITED COLONIES FROM 1776 TO 1782, INCLUSIVE.

Years	Pounds exported	Pounds consumed or on hand in Great Britain	Pounds consumed or on hand in other countries in Europe
1776.....	14,498,500.....	*	14,498,500
1777.....	2,441,214.....	†	2,441,214
1778.....	11,961,533.....	7,520,550.....	4,440,783
1779.....	17,155,907.....	10,982,899.....	6,173,008
1780.....	17,424,967.....	11,474,791.....	5,950,176
1781.....	13,339,168.....	7,600,296.....	5,738,872
1782.....	9,828,244.....	6,364,813.....	3,463,431
	86,649,533.....	43,943,349.....	42,705,984

* This year Great Britain exported to the Continent nearly 26,000,000 lbs. of old stock.

† Great Britain exported this year to the Continent 6,000,000 lbs. of former stock.

Total exportation for the seven years, 86,649,533 lbs., or an annual average of 12,378,504 lbs. Of the total seven years' exportation, 33,974,944 lbs. were captured by the British during the war.

The following table exhibits the exports of tobacco from the United States, for the years 1787-8-9, immediately preceding the adoption of the present constitution :

STATEMENT SHOWING THE QUANTITY OF TOBACCO EXPORTED FROM THE UNITED STATES FROM 1787 TO 1789 INCLUSIVE.

Years	Pounds exported	Pounds consumed or remaining on hand in Great Britain	Pounds consumed or remaining on hand in other countries in Europe
1787.....	90,041,000.....	45,379,795.....	44,661,205
1788.....	88,595,000.....	39,600,404.....	48,995,186
1789.....	88,675,000.....	48,831,232.....	39,843,768
	267,311,000.....	133,811,431.....	133,500,159

Total exportation for the three years, 267,311,000 lbs. or an annual average of 89,103,666 lbs.

It may be proper to remark, that the weight of a hogshead of tobacco is much greater now than formerly. Originally, tobacco being less compactly pressed, the hogsheads averaged only six hundred pounds, but they gradually increased, and in 1770 reached one thousand pounds—average. At this time Kentucky averages about thirteen hundred pounds per hogshead, and the average of all kinds, (Kentucky, Virginia, Maryland, and Ohio,) we have estimated at twelve hundred pounds per hogshead, which we believe to be very nearly right. The annual average

exportation for the twenty-one years, from 1815 to 1835, inclusive, is within a fraction of 82,760 hogsheads. Taking our estimate of twelve hundred pounds per hogshead to be the true weight, we shall thus have 99,313,000 as the annual average for the twenty-one years—and we have seen that the annual average exportation for the four years ending in and including 1775, was 99,374,785 pounds, which establishes the remarkable fact, that the exportation of leaf tobacco remained stationary for a period of sixty years. Since 1835 the average is 117,000 hogsheads, but at a lower average of price.

The following statement furnishes at one view the exports of leaf and manufactured tobacco and snuff, from 1790 to 1851, inclusive :

Statement exhibiting the number of Hogsheads of Tobacco exported from the United States from 1790 to 1851 inclusive, and the average price per pound, and gross value from 1802 to 1851 inclusive; also the number of pounds of Manufactured Tobacco and Snuff exported from 1791 to 1851 inclusive, and gross value from 1817 to 1851 inclusive.

Years	No. hds. Leaf Tobacco	Average price per lb.	Total value	Manufactured Tobacco lbs.	Snuff lbs.	Value of Manufactured Tobacco and Snuff
1790	118,460			—		
1791	101,272			81,122		
1792	112,428			117,874		
*1793	59,947			137,784		
1794	72,958			19,370		
1795	61,050			20,263		
1796	69,018			29,181		
1797	58,167			12,805		
1798	68,567			142,269		
1799	96,070			406,076		
1800	78,686			457,713		
1801	103,758			472,282		
1802	77,721	6 $\frac{5}{8}$	\$6,220,000	233,591		
1803	86,291	6	6,230,000	152,415		
1804	83,341	5 $\frac{5}{8}$	6,000,000	298,139		
1805	71,251	7 $\frac{3}{8}$	6,341,000	428,460		
1806	83,186	6 $\frac{1}{4}$	6,572,000	381,733		
†1807	62,236	7 $\frac{1}{8}$	5,476,000	274,952		
†1808	9,576	7 $\frac{1}{8}$	638,000	274,952		
1809	53,921	5 $\frac{7}{8}$	3,774,000	36,332		
§1810	84,134	5	5,048,000	529,285		
1811	35,828	5	2,150,000	752,553		
||1812	26,094	3	1,514,000	588,618		
1813	5,314	5	319,000	283,512		
1814	3,125	6 $\frac{1}{4}$	232,000	79,377		
1815	85,337	8	8,235,000	1,034,045		
1816	69,241	15 $\frac{1}{4}$	12,809,000	576,246		
1817	62,365	12 $\frac{3}{4}$	9,230,000	1,115,874	5,080	\$281,509
1818	84,337	10	10,241,341	1,486,240	5,513	373,875
1819	69,427	10 $\frac{1}{2}$	8,874,167	926,833	13,710	237,192
1820	83,940	8	8,188,188	593,358	4,996	149,589
1821	66,858	7 $\frac{1}{4}$	5,798,045	1,332,949	44,552	149,083
1822	83,169	6 $\frac{3}{8}$	6,380,020	1,414,424	44,602	157,182
1823	99,009	5 $\frac{3}{8}$	6,437,627	1,987,507	36,684	154,955
1824	77,883	5 $\frac{1}{8}$	5,059,355	2,477,990	45,174	203,789
¶1825	75,984	6 $\frac{7}{8}$	5,287,976	1,871,368	53,920	172,353
1826	64,098	6 $\frac{7}{8}$	5,347,208	2,179,774	61,801	210,134
1827	100,025	5 $\frac{3}{4}$	6,816,146	2,730,255	45,812	239,024
1828	96,278	4 $\frac{3}{4}$	5,480,707	2,637,411	35,655	210,747
1829	77,131	5 $\frac{5}{8}$	5,185,370	2,619,399	19,509	202,396
1830	83,810	5 $\frac{3}{8}$	5,833,112	3,199,151	29,425	246,747
1831	86,718	4 $\frac{3}{4}$	4,892,388	3,639,856	27,967	292,475
1832	106,806	4 $\frac{3}{4}$	5,999,769	3,456,071	31,175	295,771
1833	83,153	5 $\frac{3}{4}$	5,755,968	3,790,310	13,453	288,973
1834	87,979	6 $\frac{1}{4}$	6,595,305	3,956,579	57,826	328,409
1835	94,353	7 $\frac{3}{4}$	8,250,577	3,617,854	36,471	357,611
1836	109,442	7 $\frac{5}{8}$	10,058,640	3,246,675	46,018	435,464
1837	100,232	4 $\frac{7}{8}$	5,765,647	3,615,591	40,883	427,836
1838	100,593	6 $\frac{1}{8}$	7,392,029	5,008,147	75,083	577,420
1839	78,995	10 $\frac{1}{2}$	9,832,943	4,214,943	42,467	616,212
1840	119,484	6 $\frac{3}{8}$	9,883,657	6,787,165	37,132	813,671
1841	147,828	7	12,576,703	7,503,644	68,553	873,877
1842	158,710	4 $\frac{1}{8}$	9,540,755	4,434,214	42,668	525,490
1843	94,454	4 $\frac{3}{8}$	4,650,979	3,404,252	20,455	278,519
1844	163,042	4 $\frac{3}{8}$	8,397,255	6,046,878	28,668	536,600
1845	147,168	4 $\frac{3}{4}$	7,469,819	5,312,971	44,399	538,498
1846	147,998	4 $\frac{3}{8}$	8,478,270	6,854,856	52,458	695,914
1847	135,762	4 $\frac{3}{8}$	7,242,086	7,844,592	37,051	658,950
1848	130,665	4 $\frac{3}{8}$	7,551,122	6,698,507	36,192	568,435
1849	101,521	4 $\frac{3}{8}$	5,840,247	7,159,397	49,888	613,044
1850	145,729	5 $\frac{5}{8}$	9,951,023	5,918,583	44,690	648,832
1851	95,945	8	9,219,251	7,235,358	37,422	1,143,547

* French Revolution. † Berlin and Milan Decrees. ‡ Embargo. § Regie in France decreed. || War with Great Britain. ¶ Duty in England lowered from 4s. to 3s. per pound.

On a careful examination of the foregoing statements, it appears that when our exports of leaf tobacco, for two or three successive years, much exceed one hundred millions of pounds, for some succeeding years they are proportionably reduced below that standard. It is also evident that the Revolutionary war gave a check to the exportation of leaf tobacco, from which it has never recovered—for until that period, as may be seen by a

reference to the preceding statements, the annual average exportations increased regularly and steadily. It was 37,780,000 pounds greater for the years 1763 to 1770, than for the years 1744 to 1746; and for the years 1772 to 1785, it was 31,594,735 more than the annual average for the years 1763 to 1770. In other words, for the thirty-one years immediately preceding the Revolution, our exports of leaf tobacco annually increased very nearly 2,328,000 pounds, and for the sixty years since that period, it has remained stationary, except when interrupted by wars or other commercial embarrassments. The reason is apparent. Before the Revolution all Europe depended on us for supplies of the article, but being cut off from the supplies, (by the war,) Europeans turned their attention to growing it for themselves, and have continued to cultivate it all over the continent, while they have checked its consumption by the onerous taxes above indicated.

It will be observed that the exportation of manufactured tobacco and snuff has increased largely since 1791, and more particularly in the last nine years.

It is remarkable in these facts, that the increased consumption in the United States has been the main dependence of the grower of tobacco, since the foreign demand has progressed in so moderate a degree. It is undoubtedly the case, that in England the removal of indirect taxes upon other articles of consumption has favored the consumption of tobacco in some degree, even although on that article there has been no change since the duty was lowered in 1825 from four to three cents per pound. — *United States Economist*.

TURPENTINE BUSINESS OF NORTH CAROLINA.—Statistical information in regard to the products and commerce of this state is exceedingly difficult to obtain; consequently all attempts at an estimate must be defective; but yet attempted estimates of an article which forms so important an item in the labor and wealth of Eastern Carolina as turpentine, cannot fail to be interesting, even should they fall below the truth, or in some degree rise above it; and they may possibly lead to good results. It is certainly very desirable that we should have some acquaintance with the resources of the state and the extent of her products, which our present means of information very partially furnish.

Few persons, perhaps, unconnected with the commercial transactions now carried on in this state in the single article of turpentine, can form an idea of the quantity annually made in our limits, the amount of labor employed in its manufacture, the large capital invested, the large number supported by it, and the various uses to which it is appropri-

ated. Nor are we prepared to enlighten them fully upon the subject, because of the necessarily limited information which even dealers in the articles possess, in reference to it. In our conversation with intelligent gentlemen engaged in the business, we have been enabled to gather up some particulars, however, which may be interesting.

We find the impression to be, that about 800,000 barrels of turpentine are now annually made in this state. Not more than 200,000 barrels, if that, were shipped to New-York and other ports the past year in its crude state, and the largest portion of the whole being distilled in this state. The estimated value to the makers is about \$1,700,000 annually, and may be \$2,000,000. About 4,000 or 5,000 laborers are engaged in making it, and perhaps three times as many more human beings are supported mainly by the proceeds of its first sale. The distillation of turpentine in this state is now carried on very extensively, which will render the shipment of it in its crude state very small in future. It is supposed that there are now in operation about 150 stills, which at the average cost of \$1,500 with fixtures, shows that there is an expenditure of \$225,000 to begin with in the distilling of spirits of turpentine. This number of stills, to have steady work, would require 900,000 barrels annually—more than is now made; which to us is an indication that the distilling business is overdone. Should the makers of the article continue to multiply stills, and thus monopolize the distilling, as well as the making, it will be necessary for those now engaged in it to invest their capital in other pursuits. The cost of distilling is very great, and when we reckon the cost of transportation, the profits of distillers, of ship-owners, commission merchants, and the vendors of the article abroad, it will be seen that the capital and labor employed are not only immense, but the numbers who are supported by the manufacture and sale of the article are astonishing. Perhaps there is no one article produced in this country by the same number of laborers, which contributes so much to the commerce and prosperity of the country, as the article of turpentine.

TURPENTINE IN THE SOUTH.—PRODUCTION OF TURPENTINE IN SOUTH CAROLINA—EXPORTS IN PAST YEARS—RESOURCES FOR MANUFACTURING—VALUE OF LANDS—PROCESS OF EXTRACTION—FACILITIES OF TRANSPORTATION—DISTILLATION—ESTIMATE OF PROFITS, ETC.—As the manufacture of turpentine in this state has excited some interest within a year or two past among our agriculturists, and many of them are beginning to devote their attention to it, it has occurred to me that a brief notice of its history and progress might not be uninteresting to those readers who contemplate embarking in the business.

Several communications on the subject have appeared in the papers of this state and Georgia, from the various details of which I have condensed a summary of information concerning the process of manufacturing and probable profits. A collection of old documents before me relating to the early history of the state, furnishes a few items of value, by means of which I am enabled to give you the exports of the article in past years. Personal observation, and the results of experiments communicated by a number of friends largely engaged in the enterprise, have given ample evidence of the facilities afforded by many sections of the state for abundant crops, quick transportation to a good market, and the prospect of a fair reward to the industry and skill of the manufacturer. On this latter point there are some trifling discrepancies in the reports from different sections, which must necessarily be the case, as no exact standard of profit can be laid down for the whole state, but must depend upon various circumstances of locality, quality of lands, capital and labor invested, and the amount of practical knowledge, experience, energy and economy, brought to bear upon the successful execution of the work.

Exports in past years.—From statistics before us, we derive the information, that the attention of our predecessors was turned to this commodity as an article of export, nearly two hundred years ago, although even to the present day, so far as our own state is concerned, there is but little practical knowledge afloat on the subject of its production and manufacture. Our North Carolina brethren have long since made it their great staple, and it is not unworthy of our own consider-

ation, whether it might not be rendered, with us, a valuable adjunct to our overstocked gin-houses and granaries.

A "Complete Description of Carolina and the Natural Excellencies Thereof," published in London in 1632, thus enlightens us as to the amount of exports of tar:

"Tarr, made of the resinous Juice of the Pine (which boyl'd to a thicker Consistence is Pitch) they make great quantities yearly, transporting several Tuns to Barbadoes, Jamaica, and Caribbe Islands."

Governor Archdale's account of the Province (1707) mentions the arrival in England of "17 ships from Charles Town Laden with Rice, Skins, Pitch and Tar." In another account "drawn up at Charles Town in September, 1731," the trade of Carolina is represented as being "so considerable that of late Years there has sail'd from thence Annually above 200 Ships, with Merchandizes of the Growth of the Country, besides 3 Ships of War. It appears by the Custom House Entries from March, 1730, to March, 1731, that there sailed within that time from Charles Town 207 Ships, most of them for England, which carried among other Goods, 10,754 Barrels of Pitch, 2,063 of Tar, and 1,159 of Turpentine."

In one of these pamphlets I find the following—

"Account of several species and quantities of Commodities of the Produce of South Carolina, which were exported from thence at the Port of Charles Town, in one year from first November, 1747, to 1st November, 1748, together with the rate and amount of the value of each in Sterling money in South Carolina Currency."

Species	Naval Stores	Quantities	Rates of value in		Amount of Value in S. Car. Currency
			Sterling £ s d	S. Car. Currency £ s d	
Turpentine.....		2,397 bbls.....	0 7 1.....	2 10 00 per bbl.....	5,992 10 00
Rosin.....		97 ".....	0 7 1.....	2 10 00 ".....	242 10 00
Pitch.....		5,521 ".....	0 6 5.....	2 5 00 ".....	12,422 5 00
Tar common.....		2,784 ".....	0 5 00.....	1 15 00 ".....	4,872 00 00
Do. green.....		291 ".....	0 7 1.....	2 10 00 ".....	727 10 00
Oil of turpentine.....		7 ".....	2 2 10.....	15 00 00 ".....	105 00 00
Do. do.....		9 jars.....	1 8 6.....	10 00 00 per jar.....	90 00 00

Resources for Manufacturing.—Travelers through the middle and lower districts of the state, agree in pronouncing the pine forests of these sections as well adapted as those of North Carolina for the manufacture of turpentine. One writer calls the attention of the owners of large bodies of pine land, heretofore regarded as but of little value, to the fact, that "the day may be near at hand when they will find themselves the owners of mines more sure, if not quite so profitable, as those of California." In the districts of Orangeburg and Colleton especially, may be found lands, the value of which for the profitable making of turpentine has been tested for several years. Throughout those of Horry, Darlington and Marion, the trees are of excel-

lent quality, and this section is destined to be the seat of very extensive operations in the business. The route contemplated for the Wilmington and Manchester rail-road runs through the centre of it; and in anticipation of the success of this enterprise, lands which once brought no more than ten to twenty cents per acre, have risen to \$1 and \$1 50. In North Carolina, it is estimated that about 800,000 barrels of turpentine are annually manufactured—value to the makers from \$1,700,000 to \$2,000,000.

Value of Lands.—Good lands can now be had in the lower parts of Barnwell, Colleton and Charleston districts, at 50 cents to \$2 per acre. Near the village of Summerville, 22 miles from Charleston, they have been pur-

chased within the past year at 75 cents and \$1, and in one or two instances, as low as 50 cents. In the vicinity of Orangeburg, the range is from \$1 50 to \$5. Many of the neighboring planters have embarked in the business, and at present it is difficult to obtain suitable locations.

Facilities of Transportation.—The section of country embraced within the districts of Colleton, Charleston, Barnwell, Orangeburg, Sumpter, Georgetown, Horry and Williamsburg, is considered the cream of the turpentine region of this state. The South Carolina rail-road passes directly through the centre, from one end to the other of each of the first four names, and opens, through a portion of the fifth, communication with the western boundaries of the other districts. The Edisto River runs through the same districts within a few miles of the rail-road crossing it near Branchville, and extending in the immediate vicinity on the other side for the distance of one to eight or ten miles. In the parishes of St. Stephen's and St. John's, Berkley, the Santee River and Canal, and Cooper, Wando and Ashley rivers, afford easy access. Further north, the Congaree, Pedee, Wateree, and Lynche's Creek, furnish steam and poleboat communication with the city, and the completion of the rail-road from Wilmington will still further extend these facilities.

Process of Extraction and Preparation.—The pitch-pine yields five different substances, which are included in the gum or resin, and obtained thence by extraction and subsequent distillation. Turpentine is the gum in the liquid state, drawn from the tree while growing, by incision and the heat of the sun. Oil of turpentine is extracted from turpentine by distillation, and the portion which remains is resin. After the trees have been cut down, split up and dried, the application of fire-heat produces tar, the solid part of which is separated from the liquid by boiling, and becomes pitch. Turpentine is obtained from boxes cut in the standing green trees, about a foot from the ground, into which the sap descends through slight incisions made into the tree, immediately above, with an instrument especially constructed for this purpose. The process of boxing, chipping and preparing barrels for shipment, is thus described by an old hand at the business:

“Method to be observed in making Turpentine.—Box the tree after the sap is gone down and stop before it rises; therefore it will require more hands to box than it will to work the trees. A good hand will cut from 50 to 60 quart-boxes a day; some expert axemen in practice, may cut 100, but it is very seldom such hands are to be found. Care should be taken to cut the box on the straight side of the tree. Some trees will contain from 1 to 4 boxes, owing to the size of it. Care should be taken to leave from 4 to 6 inches of sap and bark between faces, so as to preserve the

life of the tree. Cut the box from 4 to 4½ inches deep, about 8 inches wide. Go down the stump of the tree so as to cut the heart as little as possible. Clean out the chips and bark from the boxes that your turpentine may be free of them. The next work, after the box is cut, is to gauge or corner, by a few chops, commencing in the edge of the box, running up the tree widening it at the same time, so as to make a channel for the turpentine to run into the boxes. If the face is nearly a foot wide, say from ten to eleven inches, then your boxes, or at least a part of them, will fill quickly, and you should have your barrels ready so as to dip as fast as the boxes fill. The next work, after the cornering is done, is to be done with a hatchet made for the purpose; then comes the round shave, you chip two or three times with a hatchet, keeping the face smooth, then begin with the round shave. Never go into the tree more than 2½ or 3 grains of the wood, and that should be repeated every eight or nine days, never going up the tree more than one-eighth of an inch at a chipping, that is with the round shave, the only object is to keep the old cut fresh, you may go over every seven days as many persons do. A hand can chip over his task in five days, some will in less time. Twenty-five hundred is a task for a good hand, then he has two days to dip; if his trees run well and are thick, he can dip three barrels a day, if not, from two to two and a half. The timber for barrels should be got in the winter, staves 32 inches long, the heading wide, so as to make, when round, 17½ inches across; a common cooper will make from four to six good barrels a day. An average to the hand is two hundred barrels per year, which varies in price from \$2 50 to \$4 per barrel, as prices current will show.”

Another writer describes the method of preparation still more fully, as follows:

“A good crop season, with occasional showers, is about the most favorable season for the running of the trees. The trees should be boxed at least 18 inches from the ground, so as not to be overrun by heavy rains, and for greater convenience in dipping also. The boxes, moreover, should be cut when the form of the tree will permit, on the north side of the tree. They are not so much exposed then to the action of the sun. The turpentine when running to the box, protected in this way, will retain more of the spirits. Besides the advantage of saving more spirits from evaporation, by having the boxes on the north side of the tree, you have the boxes protected from the dust and leaves that fly about with the south winds, which prevail most constantly during the summer. When the boxes are cut they should be well cleansed of the chips; and in chipping the tree afterward, care should always be taken to keep the chips of wood and bark from

falling into the boxes. It is important in boxing the trees to see that the hands perform their task properly, and not allow them to mislead you, as they will frequently do, by saying that they perform their task, without half doing so. Neglecting this particular, you may suppose, when the running season comes, that you are making a bad crop without knowing the true cause of short yield—that your trees are not half boxed. The experiment, I learn, has been made successfully in chipping over the same spot twice. The object of doing this is to have the running exposed on less of the face of the tree, and to make the trees produce for a greater number of years before the chipping gets so high as to be very inconveniently managed. As the chipping goes on from year to year, you have a longer face of the tree for the turpentine to pass over before it reaches the box. The value of the turpentine then is very much diminished and you have to gather it from the face of the tree for scrape, which is worth but about one-half as much as what is dipped from the boxes.

“To guard the trees from the worm and from fire, rake away the leaves and chips every season. The turpentine should be gathered clean as possible from the boxes, and put up in neat barrels of uniform size and about the standard weight, which at present is 320 pounds gross weight. In dipping turpentine, the virgin or yield of the first year should not be mixed with the dippings from trees of older running. It should be carefully barreled by itself, and sent to market. This quality of turpentine, most valuable just after it is gathered, diminishes in value when kept, by the rapid loss of the spirits. It is not unusual in North Carolina to continue to chip trees until you run them up from 12 to 15 feet high. Any good axeman that can cut twice in one place, can be learned in a week to cut 50 boxes per day, and soon up to 75, and soon learn to chip well. The most important part of the labor is to have the trees properly boxed and chipped, so as to insure you constant gain. Green hands to commence cutting boxes, say the 1st of November, would cut by the middle of February from five to six thousand boxes, which are about as many as they could tend well the first year. From the number of trees that would run well and work steadily, the hand will make the number of barrels of turpentine herein stated. There are many hands in North Carolina who tend 7,500 to 9,000 boxes for their tasks, making 300 barrels and upward of turpentine; but they are the brag hands of the country.

“Ordinary hands will chip from 8 to 10 hundred boxes per day, and when getting out the turpentine dip 3 bbls. per day; while tip-top hands will chip from 12 to 15 hundred

per day, and dip from 4 to 6 bbls. of turpentine, where their trees stand thick and their boxes are well filled.

“After tending your trees six or eight years from your first boxing according to the procedure in Carolina, you back box the same trees, leaving some 2 inches of the sap on each side of the tree, between the old and the new box, thereby preserving the life of the tree. Then, after tending these boxes as many years as the first, you can cut the faces out 10 or 12 feet by the axeman having a bench to stand on, which afford an immense quantity of the rich kind of wood, such as tar is run from in North Carolina.”

Distillation.—The cost of distilling is very great, and it is a business requiring no small capital and energy. In North Carolina, there are in operation about 150 stills, which, at an average cost of about \$1,500, with fixtures, demand an expenditure of \$225,000. There are but two that I know of in this state—one near Orangeburg village, owned by captain V. D. V. Jamison, a worthy and enterprising resident of that place, and another in this city, established several years since by Messrs. B. F. Smith & Co., which I took occasion to notice in a previous article on the public improvements of Charleston. These gentlemen are very extensively engaged in the distillation of turpentine, prepared to purchase it in any quantity, and to furnish all the tools necessary for carrying on the manufacture of it, of the best quality, and on liberal terms. They have purchased most of the crop raised in the lower and middle districts, and have every facility for insuring prompt sales and returns.

Estimate of Profits.—From a pamphlet recently published in this city, on the production of turpentine, I extract the following calculation, showing the probable profits of making the article, in estimating the yield per hand at 200 barrels:

Average price of dip turpentine,	
\$2 50; scrape, \$1 25	
150 barrels dipping at \$2 50	\$375 00
50 “ scrape at \$1 25	62 50—\$437 50
Deduct expenses for making 200	
barrels, at 30 cents	60 00
Conveyance to market, at 25	50 00
Commissions, &c.	27 50— 137 50
Making clear to the hand...	\$300 00

The average yield here assumed appears very large. We find this estimate, however, amply supported by other published reports and observations, derived from the best authorities. One of these is from an experienced North Carolina manufacturer, who spent several months in an examination of the pine lands of South Carolina and Georgia. He gives, as his opinion, that no region of the world offers greater inducements to embark in the business, than the

pine lands of these two states. The trees, in many sections, are so numerous as to be almost inexhaustible, and the yield, both in respect to quantity and quality, equal to any he had ever found in the best regions of North Carolina. The location of these lands, in the immediate vicinity of rail-roads, navigable streams and seaport markets, offers the best facilities of transportation and ready sales. An average crop to the hand he estimates at 200 barrels per annum, prices varying from \$2 50 to \$4,* and expresses his conviction, that three to four hundred dollars can be made clear to every hand employed.

A gentleman engaged in the business near Ridgeville, thirty-one miles from Charleston, informs me that with forty hands, he succeeded the last year in making one hundred and twenty-five barrels to the hand, or 5,000 barrels,

Which, at a little less than \$2 per barrel, as a fair average for the crop, is equal to about.....	\$9,000
The expenses deducted, say.....	6,000

Leaves a net profit of..... \$3,000

A writer, in a late number of the *Charleston Mercury*, gives a statement, showing the results of the experiment, made by one of the most respectable and enterprising citizens of Barnwell district. He does not indorse to the full many of the calculations which have appeared, which he considers as extravagant and over-wrought. The main object of the communication would seem to be, to prevent the indulgence of too sanguine expectations, on the part of those entering into the business, and not to depreciate the value of a judicious investment of capital and labor, in its prosecution. It is written in a candid spirit, by one who has been an eye-witness, and enjoyed ample opportunities of information. The conclusion at which he arrives, is that the business may be rendered a profitable one to those who happen to be favorably located, with regard to facilities of transportation, set but little value on their fine timber, and are tired of making cotton at the low prices, to which planters have been hitherto compelled to submit. With skilful management, and the assistance of a person brought up to the business regularly, he clearly shows that the turpentine manufacturer may reasonably calculate on a fair remuneration for his outlay and services. This result may not be realized where the inconvenience of conveying the produce to market by wagons, hauling from a great distance to the railroad, or floating down a small stream, subjects the manufacturer to heavy expense and delay.

* I quote literally, but this is too wide a range—\$3 being the ultimatum.

The danger to be apprehended from fire, probable injury to the fertility of the land by the extraction of turpentine from the trees, checking of the growth of the timber and exhaustion of soil, are all matters of interest to be taken into the account. With these comparative estimates of profit and loss as a basis, the writer proceeds to detail the plan pursued by the manufacturer above alluded to, who has gone into the operation, under the best possible auspices.

"The boxing of the trees," he informs us, "was commenced in January, and, though this was a late beginning, he made up for it in the number of hands employed. For having only seven tasks to cut, he had engaged in the work about twenty-five hands. The chipping required the work of seven hands throughout the whole season, and the dipping three. The coopering required two hands, besides the extra labor of getting the staves and hoop poles. The whole operation required the undivided attention of from twelve to fifteen hands, from the time of furnishing the boxes until the season closed. He had in his employment a genuine North Carolina dipper, a man raised to that business and no other. He was active, industrious and skilful, and the hands did all the work that could reasonably be expected or desired."

He then proceeds to state the crop made :

"As the season has scarcely quite closed, it is not practicable to state the precise number of barrels made, but it is quite certain that the whole crop will not exceed one thousand barrels. A very small portion which has been sold, brought two dollars and three-quarters per barrel. But putting the price at what has been invariably considered a fair average, passing by the circumstances that, after the first year, a large proportion of the crop is scrape, for which only half price is obtained, and twenty-five hundred dollars will be the gross amount received for the year's yield. Take off twenty-five cents for rail-road transportation, and we have \$2,250. From this is to be deducted expenses of storage, drayage and commission in Charleston."

The inference from this calculation, is, that as much as two hundred dollars to the hand will not be realized, which may freely be admitted, without making it out to be a very bad business. There are few cotton planters who can show as clean a balance-sheet, for some years past, in the history of their operations. In drawing his comparison between the results above exhibited and the profits of the cotton planter, the value assigned to the crop of the latter can hardly be admitted as a fair average.

"But I am far from admitting that it is as good as cotton at nine cents. Of course, the profits of the cotton planter vary with the

quality of his soil, but there is a material circumstance, apt to be overlooked in such calculations, as this: The cotton planter may not sell two hundred dollars' worth of cotton to the hand, but he invariably makes, besides his cotton, a provision crop to support his hands, horses, cattle, hogs and his family. Let him sell his cattle, his hogs, his carriage horses, his saddle horse; let him put away his servants, and board out, and employ his whole force in making cotton, without a grain of provisions of any kind, sowed or planted, to attract his attention and energy from the one object, and who will say that he cannot make as much as \$200 to the hand and even more than that, at the present prices of cotton?"

Here we have both sides of the picture fairly presented, from which the candid inquirer can draw his own inferences, weighing all circumstances, and making all due allowances.

Thus I have endeavored to collect for the information of such of your readers as may feel interested in the subject, a few crude materials, from which they may extract something that may be of use to them. The results given are not, it is true, derived from practical knowledge, but they may be relied on in the main as substantially correct. I have, however, taken considerable pains in prosecuting the inquiry, for the benefit of friends about to enter upon the experiment, obtaining facts from diligent personal observation and indisputable authority, and arranging them into a form which may serve for references, and prevent many useful hints which have been given out, either in print or in conversation, from being lost or forgotten. Such as they are, you are welcome to them, and if they can benefit any one of your subscribers, the time and space consumed will not have been misapplied.

TURPENTINE BUSINESS IN GEORGIA.—The Savannah Republican says: "We presume the extent to which the manufacture of turpentine is being developed in this state is not known to our readers. If its production goes on increasing, for a few years longer, as rapidly as during the last year or two past, it will not take long to transfer the general headquarters of the turpentine trade from North Carolina to Georgia. So far as we are informed, most of those who entered upon the business of producing turpentine in Georgia, have had as good success as could reasonably be expected. Such, however, has not been the case in Barnwell district, in South Carolina. The planters in that district seem to have been wrongly instructed in the outset; which circumstance, together with the advance in cotton, has induced them generally to give over the production for the present.

"We are indebted to the kindness of a mercantile friend, who has procured for us the statistics which ought to be produced in Georgia, whose entire product will amount to not less than *twenty thousand eight hundred barrels!* These gentlemen are, many of them, personally known to us—nearly all of them our subscribers—and the information may be relied on as accurate. To this must be added the production of seven or eight more persons, who have more recently begun the business in Georgia, and of two in Florida, whose names we have, but it is out of our power, at present, to indicate the probable result of their labor. The same remark is applicable to the article received by the river. We are satisfied, however, that the whole product of Georgia and Florida, during the season ending on the 1st of September, will reach the figure of 30,000 barrels; of which we put down 25,000 to Georgia. This will represent a value of some \$80,000 to be divided among a moderate number of producers.

"At the same time, it is worthy of remark, that the distillation of crude turpentine is rapidly increasing at various points. Including the large distillery in this city, under the charge of Young and Gamill, we count no less than ten distilleries in Georgia, either actually erected or ordered, and on their way to their destination."

TEA CULTURE IN THE SOUTHERN STATES.—We received recently a visit from Mr. FRANCIS BONYNGE, a gentleman who has spent fourteen years in the East, actively engaged in the cultivation and manufacture of indigo, sugar, saltpetre, tea and coffee, and whose present object is, to introduce into the southern states the culture of the tea plant, the mangoe tree, date tree, coffee plant, &c., and the melons and vegetables of the East Indies, and to carry out the manufacture of the tea leaf, and also of the indigo plant, and to give a full and fair trial to both tea and indigo.

Mr. Bonyngé informs us that the soil and climate of the southern states are more suited to the cultivation of tea than those even of China; and that indigo, which was, by-the-by, formerly produced here, can be grown to any extent; and that the coffee plant, in all probability, would flourish here to great advantage, inasmuch as the soil and undulating nature of the land would be in its favor, and the cold of the latitude of this city is not so intense by thirteen degrees as that of the east of China. In fact, Mr. Bonyngé has seen this plant growing wild in N. latitude 27° 30', on hills of from three to five hundred feet in height, where, too, there was an abundance of frost, snow and hail.

Our space will not allow us at present to give further particulars on this matter; Mr.

Bonynge, however, who can be found at the boarding-house of Mr. Becase, 225 East Bay, has with him the strongest testimonials in favor of his project, from the Hon. Abbott Lawrence, our Minister at the Court of St. James; Daniel Lee, Esq., of the Patent Office in Washington, and Editor of the *Southern Cultivator*; and other gentlemen alike distinguished for their position in society, and their literary and scientific attainments; which he will take much pleasure in showing to those who may feel desirous of becoming fully acquainted with the subject. We ourselves regard the introduction of these plants into our state as a great desideratum, and consequently call the attention of our planters, and such of our citizens as may be interested in the matter, to the visit of Mr. Bonynge to our city.—*Charleston Courier*.

TEA, INDIGO, &c.—CULTIVATION IN THE SOUTH.—Mr. Bonynge, who is referred to in the last paper, has written a letter for the *Charleston Mercury*, which, as presenting some new views, we extract:

My object is to show you the imperative necessity you are under to bestir yourselves, and to introduce, not one staple only, but many, and save your country from the impending depression that hangs over it. I will take the last twenty-four years of the rice trade for comparison, viz.: from 1824 to 1847, both years included:

	Tierces	Average Tierces
From 1824 to 1829 six years.....	676,816	112,802
" 1830 to 1835 ".....	761,341	126,885
" 1836 to 1841 ".....	648,458	108,076
" 1842 to 1847 ".....	774,988	129,164

You will perceive, in the above comparative review of the rice consumed in, and exported from Charleston, that in reality there is a decline, for twelve years, of one per cent. per annum.

Prices from 1835 to 1841, seven years, average yearly.....	\$3 30 to \$3 88
Prices from 1842 to 1848, seven years, average yearly.....	2 94 to 3 57

Showing a falling off in price of 10 per cent. nearly; but observe what is a most notorious and remarkable instance in this decay. It has taken place with a four years' famine in Ireland, and the universal failure of the potato and grain crops of the continent of Europe.

There have been extensive failures this year on Cooper River, &c. In a prosperous state such failures would be the concern of the individual only; but now it is a national loss, for the successful planter will obtain no higher price. There is so much less to export and to command imports; therefore the planters, the merchant, the mechanic and storekeeper will feel it.

It would be well to ascertain the cause of

decline in your rice trade. It cannot be, as you may see, from an over-supply produced in Carolina, for we see:

	Tierces
From 1824 to 1835, twelve years' shipments to Europe.....	668,669
From 1836 to 1847, twelve years' shipments to Europe.....	556,264
Decline on shipments in twelve years.....	102,405

Now, with eight millions of people starving for some four or five years of that twelve years, general failure of the potato and short-grain crops on the continent of Europe, food must have been supplied from somewhere. The merchant must be aware of the gradual displacement on the continent of American rice by East Indian (Patna and Arrakan) rice. The English merchant can ship rice, or rough rice, to England, there clean it and re-ship it to the continent, and undersell the rice of this state. I mean at their comparative values. However, the famine in Ireland, &c., did, in some way, retard the galloping consumption of the trade in this article, for in 1846-1847 there was one-half as much shipped to England as there had been in the five preceding years. Look to India, from where you have so much to apprehend. On either side of the Bay of Bengal, viz.: from Balezore to Madras, and opposite Arrakan, the price of paddy or rough rice is:

For 120 to 260 lbs., 1 rupee, or 45 cents.
Carolina, 1 bushel, 45 to 47 lbs., 90 cents.
Value of Carolina rice, 18 shillings sterling.

Arrakan Carolina rice, 10 shillings sterling.

Taking the bulk, the Arrakan is 530 to 710 per cent. cheaper, or according to quality, nearly 300 per cent. cheaper.

The rice-planter of India, with his wife and children, labor in the field. The man's clothing consists of a strip of cloth passing between his legs—one end tied up before and the other behind by a string round his body; that little piece of cloth serves him for a couple of years' clothing. His rice, fish, salt, tobacco, &c., cost him nearly thirty cents a month. It may be supposed that a poor man in that condition could not contend with the planter of Carolina with his hundreds of slaves, but that is not the case; the naked Indian has the advantage through the combination of all the planters in a district. A rice field, or rather district, is very extensive in India. Standing on the margin, the eye might wander over it, the same as if standing on the sea-shore. Government makes up the water-dams, &c. The rice lands are so extensive in India, none subject to failure is used, or need be used.

Since writing the above, I have obtained the consumption and exports of the city of Charleston in rice:

For 1848—1849, 150,330 tierces. Price \$2 80 to \$3 35
 For 1849—1850, 134,417 " " 2 87 to 3 28

or a decline on the two years, compared with the prices of seven years, from 1835 to 1841, of nearly 15 per cent.

Now, take cotton in its yearly decline in value of say 30 per cent. for the last twelve years; rice, in quantity and value, 11 per cent. for the last seven years—making up in the two staples together, a decline of 41 per cent.

I have shown in my letter of the 25th instant the fears that the planters of cotton may entertain.

In this letter I have shown that the rice trade is still in a far worse state than cotton, and that famine and scarcity do not prop it up.

I have shown that the falling off in these staples is not temporary or accidental, but gradual, and that for years the canker worm has been eating at their vitals; and so much so, that a loss in crop injures not alone individuals, but diminishes to the extent of failure the wealth of the state.

I have shown nations all at earnest work to share in the cotton trade. England, alarmed that in case of any interruption to good understanding she would be cut off of her supply of cotton, and millions of her subjects thrown into the utmost destitution, and the people of Manchester, and spinners through the United Kingdom, and the shipping interest, have resolved upon producing a supply of cotton in East India.

We know that these interests are on the proper trail, and if they will persevere, must succeed.

Some will reply, danger has been often threatened. But has it not come? Is not its advance-guard in your camp! Has it not exhausted 41 per cent. of your usual resources.

You have often heard the cry of "wolf;" you have now his head and neck within your fold; he will soon introduce his body, and assuredly will carry off your too sick noislings.

I will shortly recapitulate the foregoing, and show in round dollars the amount of decline.

Rice from 1824 to 1835, 12 years' produce, 1,423,446 tierces, at \$3 30c. to \$3 88c.—\$4,745, 878 to \$5,461,882.

Rice from 1836 to 1847, 12 years' produce, 1,423,446 tierces, at \$2 94c. to \$3 58c.—\$4,191,390 to \$5,083,261.

This calculation will show that the highest range of prices has suffered less than the lower; however, the loss on this trade for 12 years, \$554,428 to \$381,621, or yearly, \$46,202 to \$31,801.

Cotton from 1827 to 1838, twelve years, 14,048,000 bales, at 12½c. per lb., \$567,890,400.

From 1839 to 1850, 12 years, 25,545,000 bales, at 8 1-15 per lb., \$635,162,100.

For 11,497,000 bales there was a price of \$67,271,700 obtained, or \$5 85c. per bale, or per lb. 1 5-6 cents only!

Now, the tea and indigo trade together is of as great a magnitude as cotton and rice, and will be infinitely more so, once tea bursts the egg-shell space in which its cultivation is confined in China.

I will show you, gentlemen, the comparatively little labor tea cultivation requires at your hands.

First year: Place the seeds four inches apart in drills, keep the bed weeded and moist.

Second year: Transplant into fresh land, clear the brush-wood only; hoe the ground once; leaving the large trees.

Third year: Hoe the ground once, weed it once.

Fourth year: Labor of tea-making. A woman can pick 60 lbs. of green leaf. A woman or man can manufacture them into 15 lbs. of dried tea. The average on good tea lands is 320 lbs. of best kinds of black teas.

Expense of Manufacturing.—A woman's wages, say, per diem.....—
 Charcoal and firewood ½ cent }
 per lb..... } 15 lbs. 22½
 Packages, &c., 1 cent per lb. }

Wages of a man for a day.....—

But if machinery, this last item disappears. The above statement is for the making of 15 lbs. of best black tea.

Tea trees will last 25 to 30 years.

I propose tea, indigo, and date trees, &c. I do not propose that these should displace cotton and rice; by no means. All I propose is, that you should give of 999-1000 parts of your territories, now forest wastes, a little, a very little portion of that waste.

UNION—ITS STABILITY.—BRITISH POLICY REGARDING TROPICAL PRODUCTS AND THE SLAVE TRADE; ABORTIVE MOVEMENTS TO CHECK THIS TRADE; ANNEXATION OF TEXAS, HOW REGARDED IN ENGLAND; PRODUCTS OF SLAVE AND FREE LABOR; COMMERCIAL ADVANTAGES OF THE SOUTHERN STATES, AND HOW MUCH THE NORTH GAINS BY A UNION WITH THEM; SOUTHERN COMMERCIAL STATISTICS; STATISTICS OF SOUTHERN POPULATION, BLACK AND WHITE; PROSPECTS FOR THE FUTURE, ETC.—One of the chief causes of the slow growth of republican institutions in Europe is doubtless the proximity of powerful aristocratic landed interests, whose system of internal oppression furnishes them with the means of external corruption, and which they have never been slow to apply to the internal affairs of any state, where the tendency is to republicanism. Unhappy Poland was distracted, and ultimately dismembered, through

the influence of surrounding despots, operating upon the interests, passions, prejudices, and vices of its own leaders. The circumstances of the first republic of France show with what unscrupulous boldness an English ministry supported and paid party leaders, whose business it was to hurry the republicans into excesses which alienated the sympathies of the middle masses, and compelled monarchical reaction. The enormous scale on which the forgery of assignats, as proved in courts of law, was carried on by the government of England, under the immediate direction of William Pitt, for the double purposes of corrupting party leaders in Paris, and of ruining the French finances, by destroying (through excess of supply, as well as risk of fraud) the credit of that paper which was the only resource of the revolutionary government, is a fearful instance of the machinery which corrupt governments can put in operation against the stability of those institutions which they dread, and the integrity of those countries of which they covet a portion. The position of parties in the United States, and the general circumstances of the continent in relation to Great Britain, indicate the working of similar schemes against the integrity of the Union and the continuance of the "Model Republic." Within the last thirty years the most extraordinary change has been wrought in the position of England in her relations to other countries: and while she has been apparently descending in the scale of nations, and seemingly becoming annually more dependent for necessities upon the rest of the world she has been slowly and cautiously weaving a web of diplomacy, designed to replace her at once and forever at the head of commercial and manufacturing nations, and to confirm her in the dominion of the seas. From remote points her combinations have been gradually developed, until the crisis is now at hand, and she hopes to make a final and successful grasp at commercial supremacy over a dismembered union of the states.

The course of affairs since the peace of 1815 has been steadily to increase the importance of the raw materials, of manufactures, and of tropical productions, to the civilized nations of the temperate latitudes. The progress of science and the inventions of genius, have exerted a constant influence in increasing the facility with which the nations of Europe may supply themselves with industrial products, and, therefore, to diminish the amount and importance of their international trade. This tendency has, however, only served to enhance their competition for the productions of tropical climates, and of newly settled regions of which the exports are always that rude produce necessary to supply the dense populations of the older and wealthier

nations with the material for labor. Those who can best succeed in commanding these, in exchange for a small portion of the wrought fabrics, have the best prospect of outstripping their rivals in the race for wealth and power. This became manifest to the British statesmen immediately on the settlement of Europe by the treaty of Vienna, when the prospect of continuing to England her manufacturing and commercial monopoly, by keeping Europe embroiled, was at an end. A new policy was then adopted. Since she could no longer maintain a monopoly of sale at high prices, she prepared to encounter growing competition, by laying a foundation for ample supplies of raw materials and produce from her own resources, and at the same time for cutting off, as far as practicable, the supplies drawn by other nations. The great items of demand were cotton, hemp, flax, silk, sheep's wool, and indigo, as raw materials, with coffee and sugar as tropical productions, each year becoming more necessary to her people. Of the raw materials, cotton and wool were the most important. As yet, however, the demand for the latter has not greatly exceeded the English home supply, but was evidently increasing beyond it. The colony of Australia was fixed upon as the source of future supply; and of all her schemes of aggrandizement, in that alone has England been measurably successful. The wants of cotton manufacturers were daily becoming more urgent; and with every new spindle put in operation, the dependence of England upon the United States was enhanced. The British statesmen fixed upon the East India possessions as the quarter whence abundance of cotton could be realized, in full confidence that any quantity could be there raised, of a quality equal to that of the United States. Earnest attention was therefore directed to the amelioration of the condition of the people of that region, to prepare them for an extensive system of cotton culture. Simultaneously with this confident reliance upon the capabilities of India to produce cotton, she adopted the calculation that free African and East India labor, applied to her West India islands, would produce sugar and coffee much cheaper than those articles could be raised in Brazil and Cuba by the expensive and wasteful system of slave labor, more particularly if the cost of slaves and the expense of procuring them should be enhanced by the suppression of the African trade. It followed, if her reasoning was sound, that by raising ample supplies of wool and cotton in her own possessions, and increasing the sugar and coffee productions of her West India islands, by substituting free labor, supplied from her own tropical and densely peopled possessions of India, the suppression of the

slave-trade would deprive her rivals, Cuba and Brazil, of labor, and that, as blacks do not increase naturally in those regions, she would soon extinguish or at least check their competition. The conspiracy of Turnbull, the British consul at Havana, to incite a slave insurrection in Cuba, followed close upon the emancipation of British West India slaves; but it was discovered and crushed under circumstances that left no doubt of the participation of the British government in the attempted crimes.

By the example of emancipating her own slaves, and by the exercise of collateral influence, she hoped to bring about emancipation in the United States—an event which would not fail to destroy the cotton culture, and thereby protect India from opposition, as well as deprive her European rivals in the manufacture of a source of supply. The emancipation of her own slaves in the West India islands was affected by the payment of \$100,000,000 as indemnity to planters; having at hand the means of crushing any attempt at insurrection, to which sudden freedom might prompt the blacks, and bring on a barbarous and bloody war of races, such as that of which St. Domingo afforded an example, she remunerated the whites, and gradually and smoothly freed the blacks. Emancipation in the United States would necessarily be a different matter. Three millions of slaves, clothed and fed by their owners, could not be paid for. In common with their masters, they are supported by the products of their own labor, in the capacity of slaves. Their release from that condition would involve at once a cessation of production; the planters' credit with factors would cease, their nominal wealth disappear, and destitution overtake the whole in common. Putting aside all consideration of the natural enmity of races, this destitution would necessarily involve scenes of robbery, outrage and murder. If these things occur in Ireland from mere destitution, what would result from the distress of blacks and whites, fired with mutual enmity, and equally strong in numbers? At the most moderate calculation, there would be no very extensive production of cotton; the factories of New England, as well as of Europe, would lose their supplies; American shipping lose two-thirds of its freights; while Great Britain would have ample supplies of cotton in her own colonies to employ her own ships; and her manufactories, having a monopoly of the raw material, would command the markets of the world. Such was the reward which England promised herself for the exercise of philanthropy toward the poor blacks. Unfortunately, although virtue always has its reward, it does not always come in the shape hoped for by those who practise it on speculation, and the scheme fell through—most-

ly in consequence of four leading erroneous assumptions: *First.* The growing of cotton in India—notwithstanding that American seed, American planters, American cotton-gins, and American machinists, were at great expense transferred to that country—was found to be utterly impossible. The staple deteriorated in that climate so much as to render competition with the United States from that quarter hopeless. *Second.* The assumption that blacks would work in a state of freedom as well or better than as slaves, was proved to be utterly groundless: they would not work at all, and her colonies were ruined. *Third.* The assumption that emigrants from the sugar and coffee countries of India could produce as well in the West Indies, was, upon trial, found equally fallacious, and the remnant of the miserable beings whom she caused to be transported from India to Jamaica are to be sent back at great expense. *Fourth.* Her assumption that the African slave-trade could be suppressed has proved as great a blunder as the other elements of her grand scheme; and the leading authorities upon that question have acknowledged in sorrow the fact, that the horrors of the trade are at this moment not only greater than ever, but that the number of blacks that leave Africa is larger, and annually increasing. Indeed it might readily have been deduced, from the state of affairs, that inasmuch as that the demand for coffee and sugar, the products of slave labor, is annually on the increase throughout Europe, if the supply should be diminished through the failure of the English scheme to enhance it in her own colonies by free labor, then the demand for slaves would by so much be increased, and consequently the profits of the trade; and this has indeed been the case. All the attempts of England to suppress the slave-trade by the employment of her cruisers, and by her wordy contentions in relation to the right of search, have been more than counterbalanced through the demand which she herself has created for the products of slave-purchasing countries. Her blockading squadron has done literally nothing toward its professed object. So far from its having suppressed the traffic, or promised to suppress it, it was concluded by the Parliamentary Committee of Inquiry, that, although the squadron was in the very highest state of efficiency and discipline, the trade was "now conducted with an amount of organization and with a degree of confidence in the success of its adventures, such as has never before been opposed to the efforts of the nations engaged in suppressing it." The mean number of captives matters very little in such a state of things as this; and the London Times remarks as follows:

"As a mere question of fact, it has been

placed beyond doubt, that our cruisers do not prevent, nor even materially impede, the exportation of slaves from Africa, nor their importation into Brazil. On the contrary, it has been concurrently stated by the commodore and one of the most intelligent captains of the squadron, that its presence did actually tend to the consolidation and settlement of the traffic, *by confining it to houses of large capital and extraordinary resources.* We subjoin the following statement, taken from the Foreign Office reports and Mr. Bandinell's abstract :

	No of slaves exported	No. captured by cruisers
1840.....	64,114	3,616
1841.....	45,097	5,966
1842.....	28,400	3,950
1843.....	55,062	2,797
1844.....	54,102	4,577
1845.....	37,758	3,519
1846.....	76,107	2,788
1847.....	84,356	3,967

"Judging from such information as we can obtain, we think the number of slaves exported from the coast in 1848 cannot have fallen short of 100,000, of which, between 6,000 and 7,000 must have been captured, as we collect, by Sir Charles Hotham's squadron. His own evidence gave nearly thirty per cent. as the proportion of captures, speaking of captured vessels only ; but, if this is the case, the captures must have been confined to very small, or very lightly laden vessels ; for the proportion has seldom, it will be seen, reached even as high as ten per cent.

"If any conclusive confirmation were wanted of the truth, that the fluctuations of the slave-trade depended solely on the demand for slave produce in the markets of Europe, it would be found in a table which exhibits a comparative view of the extent of the trade at different periods, and of the prices at such periods of ordinary Havana sugar.

	Average price of Sugar per cwt			Slave Trade	
	Rise	or	Fall	Increase	Decrease
1825 to 1830.....	34s. 6d.	9 per cent.	— per cent.	21 per cent.	— per cent.
1830 to 1835.....	24s. 8d.	—	29 "	"	37 "
1835 to 1840.....	29s. 3d.	19 "	—	73 "	—
1840.....	25s. 4d.	—	13 "	—	53 "
1841 to 1844.....	21s. 1d.	—	17 "	—	29 "
1845 to 1847.....	26s. 7d.	18 "	—	44 "	—

"Very little doubt can exist as to the commercial character of the whole proceeding. The numbers would, doubtless, have differed had our squadron not been there ; but the proportions would have remained the same, and may as well set at rest any inquiry as to the causes producing the increase of the slave-trade at one time, and the diminution at another."

When England, through the enormous rise of sugar, caused by the ruin of her colonies, was compelled to throw her ports open to foreign sugar, she gave a direct premium for the importation of slaves. That she pretended to exclude slave sugar did not vary the result ; thus, the free-grown sugar of India found sale in Europe. The moment England bid higher for the sugar it went to her instead of Europe, and by so much was the European demand for slave sugar enhanced by the acts of England. Not only did this result from the failure of her plan, but the price of sugar was greatly enhanced to the people of England, and they were, finally, after paying \$100,000,000 to free the slaves, \$75,000,000 more in the en-

hanced prices of sugar, and \$50,000,000, to support the slave squadron—and, after an attempt to exclude slave-grown sugar from English consumption, compelled to admit it, and, therefore, directly to encourage the slave-trade by purchasing its products at high prices. While the West India blacks were in a state of servitude, they raised sugar and coffee enough for English consumption, and their numbers were not kept up by the slave-trade. By emancipating them, England was compelled to buy sugar of those who supplied labor from Africa, and who were thus compelled to import more slaves to supply the English demand for sugar and coffee. While professing to stop the slave-trade, England thus induced the importation of more blacks into Brazil and Cuba, than she had herself emancipated in her own islands. Such are the losses which speculators in philanthropy sometimes sustain.

The following table from official sources, shows the annual consumption of six articles in Great Britain, with the progressive decline in the duty :

	Cotton		Wool		Coffee	
	Lbs.	Duty per lb.	Lbs.	Duty per cwt.	Lbs.	Duty per lb.
1801.....	33,630,390	—	8,615,284	free.	750,861	1s. 6d.
1811.....	89,008,874	—	4,739,972	6s. 8d.	6,390,122	0s. 7d.
1821.....	113,896,651	3d.	16,680,013	0s. 6d.	7,327,283	1s. 0d.
1831.....	257,941,045	3d.	31,679,612	0s. 1d.	21,842,264	0s. 6d.
1841.....	442,270,413	3d.	44,611,465	0s. 1d.	27,298,322	0s. 6d.
1845.....	641,384,283	free	64,021,957	free.	37,106,292	0s. 4d.

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	Sugar		Tobacco		Tea	
	Cwt	Duty per cwt	Lbs	Duty per lb	Lbs	Duty
1801.....	3,341,496	20s. 6d.	16,904,798	1s. 7d.	20,237,753	20 per cent
1811.....	3,398,367	27s. 0d.	21,376,367	7s. 2d.	20,702,809	96 "
1821.....	3,149,454	27s. 0d.	15,598,152	4s. 0d.	22,892,913	96 "
1831.....	4,364,148	24s. 0d.	19,533,814	3s. 0d.	29,997,101	96 "
1841.....	4,208,324	24s. 5d.	22,309,360	3s. 0d.	36,675,667	25 c. per lb.
1848.....	6,162,621	13s. 0d.	27,061,480	3s. 0d.	48,735,971	25 "

The duty on cotton wool has been reduced, gradually, from 25s. 6d. per 100 pounds in 1814, when imported in foreign ships, and 16s. 11d. in British ships, until it was made free in 1845. The coffee duty here given, is that on British plantation. This was 9d.,—that is to say, on West India it was 96s. per cwt. and 84s. per cwt. on British India, until the West India productions so declined as to advance the price to a rate that would permit the import, in 1835, of India coffee at this rate of duty; the reduction of duty to 6d. on all British then became necessary, while foreign paid 1s. 3d. per lb., giving 37s. 4d. per cwt. protection to the British planter. In 1842 it became necessary to admit British coffee at 4d. and foreign at 8d. The sugar duties are those on brown British plantation, the rate on foreign being now 20s., or 4s. per cwt., and 5 per cent. less than the duties under the act of 1840 on British. The old duties on foreign sugar were 63s. per cwt. The decline in the quantities drawn from the West Indies to supply the great demand is manifest in the following summary aggregate of exports from those islands.

EXPORTS FROM BRITISH WEST INDIES.

	Sugar, cwt.	Rum, cask.	Coffee, lbs.
1831.....	4,103,696	7,843,920	20,030,602
1841.....	2,154,217	2,770,139	9,927,689

Decrease, 1,949,479...5,049,771...10,103,113

These islands, having first been ruined by the erroneous legislation of England, and the supplies of free labor restricted, were then, by the reduction of duty, exposed to the competition of slave-importing neighbors in the European markets. This state of things has produced a strong disgust of the mother country, and promoted a scheme of annexation to the United States, by which it is hoped that supplies of labor from the southern states may be opened to their fields.

The whole scheme of monopoly of raw products, and consequently of manufacturing and commercial superiority, based upon a colonial system, having thus failed, it resulted that England had become dependent, more than ever, upon the United States, for that cotton on which her existence, as a commercial nation, depends. One-half of her whole external commerce had come to consist in importing raw cotton, and re-exporting it in the shape of fabrics. Over 2,000,000 of her people, and a vast capital, are dependent for employment in manufacturing, upon the supply of the raw material; and the sole source

of that supply is the slave labor of the United States. That country which, shrouded in her navigation and restriction acts, had fancied herself independent of the world, had become entirely dependent upon the slave-labor of America. At such a moment the occupation of Texas, a country of limitless cotton abilities, by an Anglo-Saxon population in arms against the authority of Mexico, was a spectacle which England regarded with intense satisfaction. The Texan country was the sole remaining cotton land upon the North American continent, not embraced within the limits of the Union; and its capacity, under the influence of English capital, to produce sufficient for the wants of England, is undoubted; and, under the impression that cotton could there be raised by free, or at least by Asiatic labor, England strenuously exerted herself to acquire a preponderating influence in the young state, which she was not slow in recognizing as independent, proffering the most liberal treaties. Texas, on her declaration of independence, had, however, applied for admission into the Union in 1837, but was promptly rejected by Mr. Van Buren, who was at that moment engaged with England in suppressing Canadian rebellion, and who did not wish to disoblige her by entertaining the Texan proposition. Immediately on this rejection, England began to press its "good offices" upon Texas, and in 1839 she formed a convention, by which Texas was to pay \$5,000,000 as her part of the Mexican debt to England, if that power would procure the acknowledgment of Texan independence, and the new republic was to be taken as completely under "British protection," as is the Mosquito king now. At that time, however, England, owing to the state of parties in Mexico, could not procure the recognition of Texas. In 1840 the world's convention met in London, and the Texan envoy, General Hamilton, was defeated in his negotiation by their influence, which also aided Santa Anna in procuring the means for invading Texas in 1842, for the vowed purpose of emancipating slaves. This invasion of Texas by Mexico was then adopted as a collateral movement to the grand slave-trade coalition treaty got up by Lord Palmerston. Austria, Russia, Prussia, England and France, were to be parties to a treaty of mutual right of search, and this was to be made the instrument of awing the United States into submission. The minister declared in parliament, July 17, 1844, that

such had been their intention. It was at that moment, that the vigilance, skill, and address of General Cass, as minister to Paris, saved his country, by persuading France not to sign that treaty. The news of that diplomatic defeat of England reached New-York on the same day as that of the invasion of Texas under Arista. The news of the combination was also the announcement of its failure. Without France the quintuple treaty was powerless, and without that treaty England could not support the Mexican invasion, and the troops retired from Texas. Again England changed her tactics, and she sought to strengthen her alliance with independent Texas, sending Captain Elliot thither as envoy. This person manœvered so well, that he ingratiated himself with the Texan chiefs; and, with their advice, taking advantage of a change of government in Mexico, went thither to negotiate a treaty of independence. This he effected. The terms were, the *Rio Grande as the boundary of Texas*, and her independence *without* indemnity, on the *sole* condition of remaining independent, the latter being the *sine qua non* of the Englishman. This treaty was signed by the Mexican executive, with the assent of the Congress, and would undoubtedly have been accepted by the Texan authorities, had not, meanwhile, the *people* of the two countries become aroused to the crisis by the letter of the venerable Jackson, making annexation imperative. Earl Aberdeen admitted, in his note to the American government, that the utmost influence of the English government was to be used to procure the abolition of slavery in Texas, and this purpose was further indicated in the correspondence of Mr. Pakenham, with the ultimate view of a similar result in the United States. Failure again attended British schemes. The whole Texan plot was defeated, and the Union received a new state.

From the moment that the last vestige of cotton land passed under the wing of the eagle, the views of England in respect to slavery underwent a change, and a more comprehensive pro-slavery scheme of aggrandizement is now in progress. As soon as the annexation of Texas became certain, the government press began to prepare the public mind of England for a toleration of slavery, as the best means of ameliorating the condition of the blacks. The leading daily press, and the reviews, freely denounced the whole slave-trade suppression scheme. An English paper remarked:

"If the ministers of England, when carrying their measures of emancipation, had listened to the judicious advice which we know was offered to them to make the process a gradual one, and *thus prepare the negroes for liberty*, there would have been a greater probability that *their industry would have sup-*

plied the place of imported labor, and rendered the slave trade of other countries nugatory. If the ministers of England had taken into consideration the fact that *the negro is a lazy animal—indeed, the sloth of the human race—and that the ignorant field slave had no perception of liberty but that of exempting him from labor*, the hasty legislation of 1833-'34 would not have been resorted to. But the British cabinet has, for a long series of years, suffered itself to be controlled by a set of fanatical gentlemen, whose knowledge of the complicated question of slavery was very imperfect, and whose zeal totally outran their judgment. It is this set of persons—the Buxtons, the Sturgeses, the Stephensens, and others—whose influence in Downing-street has been so pernicious, and whose fatal advice has caused England to throw away, on the coast of Africa, so many valuable lives—against whom the Quarterly Review launches its severities and its sarcasms. It is, indeed, *time that the insane delusion was dispelled, and that common sense again resumed its sway.*"

This became the tone of that press which for so long a time had clamored for the right of search as the only means of suppressing the slave-trade.

Having learned by experience the best mode of emancipation, it is requisite, in order to practise it, that she should have an opportunity, and this may be found in the acquisition of new slave countries.

The contest that had so long been sustained in parliament against admitting slave-grown produce was relaxed, and Lord John Russell, now the first minister of the crown, moved to admit slave-grown sugar on the same terms as colonial. The necessity of furnishing the West Indies with laborers from the coast of Africa is freely admitted, and incipient steps are being taken to permit such emigration. Why *free black emigrants* will work better than emancipated slaves is not easily conceived. Freedom, at least British black freedom, may exist in changing the name, without altering the mode of coercion. Flogging a black *emigrant* is a very benevolent operation compared with chastising a black *slave*. Every modern philanthropist can give the reason for that. Meantime, the world's convention, which met at London in 1840, although foiled in its Texan schemes, persevered in that system of attack upon the institutions of the United States, which was to be instrumental in developing the new designs of the British government. The abolition party of the United States had, under the promptings of G. Thompson, now government member of parliament for London, asserted the necessity of the abolition of slavery, even at the expense of the Union. How a separation of the free states from the slave states was to diminish slavery in the latter it is not easy to see, unless the latter were to

be exposed to some new influence. The political adventurers, dissolute negroes, and itinerant atheists, male and female, who, petted by the English, and stimulated by those who had aided the English government in its emancipation errors, perambulated the United States, haranguing, singing, spouting, and writing, in favor of a dissolution of the Union, were, for the most part, met with the contempt they deserved; and it is a glorious example of the high-toned and comprehensive philosophy which pervades our people and the institutions they sustain, that these vagabond disseminators of treason, disunion, and civil war, were disregarded and unnoticed. On the other hand, witness the chains and exile of John Mitchel and Smith O'Brien, with their noble compeers, punished with worse than death, not because they came from abroad to stir up insurrection and civil war in a land of strangers, but because, on their own native soil, they asked for those rights of freemen which have ever been withheld from their unfortunate countrymen, and in the absence of which they have cause to envy the material well-being of American slaves. Almost every country in Europe affords examples of executions during the past two years, for political offences, for less than that of an attempt to excite a servile war. The American institutions are, however, based upon truth and justice, and perpetuated in the understanding of the people; they cannot, therefore, be shaken by the wicked sophistries of such monarchical tools.

Gradually the British commercial policy has accommodated itself to the fact, that the great staples which keep in operation the workshops of England are slave products, and that that condition of their production cannot be changed. She repeals, therefore, her duties on them, removes her discriminations, and throws open her navigation laws to the vessels of the world for their transportation to her warehouses, and her whole colonial policy becomes changed. When England was emancipating her slaves in the West Indies—when her consul was exciting insurrection in Cuba—when her exertions were greatest to suppress the slave trade—when her intrigues for Texas were ripening—the people of Canada rose in rebellion, striving to shake off her yoke, and the people of the United States “sympathized” with them. England poured her troops into the province, putting forth all her disposable force to suppress the defection. Mr. Van Buren, then President, and a warm proslavery advocate of southern interests, under a most remarkable but unseen influence, repulsed Texas into the arms of England, and, suddenly changing his policy in relation to the Canadian sympathizers, abandoned the people of Navy Island to their own resources, while denouncing the whole proceeding, and,

for this, was himself abandoned in 1840 by the northern electors. The loyal people of Canada turned out to the support of the imperial government, and were taxed cheerfully to pay the expenses: the movement was crushed, and the patriots exiled. The independence of Canada at that time would have speedily brought her into the Union, and given such a preponderance to the North, as Mr. Van Buren, with his southern feelings, could not view with satisfaction, more particularly that the policy of the English government was *then* to abolish slavery in the South, rather than to divide the Union. With the complete failure of the whole British scheme in relation to colonial products, came Mr. Van Buren's defeat as a candidate for the presidency in 1840. The opponent of Canadian independence then became committed against the Texan annexation, and this new interest gradually ripened into opposition to southern interests, and the formation of a sectional party under the pretext of “free-soil.” This party embraced the scattered disciples of the English world's convention emissaries, abolitionists, disunionists, and political adventurers of all sorts. England could not but regard with satisfaction the formation of a combination which should array the two sections of the Union against each other in hostility, and prepare the way for a rupture which might throw the whole South, with its blacks and rich staples, indispensable to her manufacturing greatness, into her hands. Cuba is fast drawing toward union with the South; and to cut off the southern states from the northern rivals of England in commerce and manufactures, unite them to Cuba, restore thereby the West India Islands to their original value, and annex the whole to the British empire, by treaties offensive and defensive, was a prize worth contending for. The extraordinary pertinacity with which the control of the Nicaraguan Isthmus is adhered to, indicates a sense of its value in such a connection. To facilitate this, Canada was repulsed. A long course of legislation, designed to alienate her, was crowned by an act taxing the loyal subjects to pay indemnities to the so-called “traitors” of former years, and their expostulations were met with leave “to annex to the United States, if they please.” Such a weight added to the northern, while events pointed to the accession of Cuba on the South, would go a long way toward breaking the Union in the centre. Mr. Van Buren, who had stood by England against the Canadian rebels, appeared as the leader of the party of disunion, and the multitude of turbulent adventurers, who seek notoriety and advancement for themselves, pressed vigorously in his rear. Disappointed political adventurers, English emissaries, and fanatical parasites of all hues and descriptions, were ready to aid in the work. The promulgator of family separation and female dishonor,

under the guise of "social reform," was the fitting advocate for federal disunion and national disgrace. Deistical libertinism and Ethiopian debauchery were well-assorted collaborators in the work of treason, under whatever pretence of philanthropy their designs might be cloaked.

The formation of the cotton states, with Cuba, into a great cotton, tobacco, sugar and coffee-producing union, calling forth the boundless fertility of Cuba, and renovating the West India Islands with the labor of the blacks of the southern states, in those hands in which their labor and numbers have thriven so well, and this empire annexed to Britain by treaties of perfect reciprocity, giving the latter command of the eastern commerce by way of Nicaragua, and all the benefits of possession without the responsibility of slave-ownership, would be a magnificent exchange for the useless province of Canada. The separation of the North from the South, under the embittered feelings which must necessarily exist before its possible consummation, would cut off the former from its supply of raw materials, deprive its ships of two-thirds its business, close the whole southern market to the sale of its wares, shut up its factories, depopulate its wharves, and reduce it speedily to the present condition of Canada. The possession of the mouths of the Mississippi would give the South absolute control of the West. There are those, now living in the valley, who can remember that the possession of the Delta of the Mississippi by Spain was fast separating the East and West. A delay of five years in the purchase of Louisiana would have dismembered the

Union, and created a separate government in the valley. If the influence of that avenue of trade was so great then, when the settlements of the West were few, and their surplus products unimportant, what would it now be, when \$50,000,000 worth of western produce, become indispensable to England, is annually borne by it to market? With such a connection, it cannot be doubted that England would return to her exclusive system, and the crushed industry of the New-England and middle states would struggle in vain for reward. Nevertheless, this is what desperate sectional politicians are striving, in connection with British emissaries, to bring about, seeking their reward in political advancement among a ruined people.

If we endeavor to form some estimate of the interest which the North has in southern prosperity, we may begin with the most obvious item, viz., the shipping. This is, according to official tables, owned in the following proportions:

Owned	Registered tonnage	Enrolled tonnage	Total
South	159,956	334,815	494,797
North	1,201,930	1,456,314	2,658,244
Total	1,361,886	1,791,159	3,153,041
Fishing and whaling	192,180	133,838	326,018

Deducting the whaling and fishing tonnage from that owned at the North, leaves 1,009,750 registered, and 1,322,475 coasting tonnage applicable to the transportation of merchandise. More than three-fourths of this entire tonnage are employed in the transportation of produce exported from southern ports. The leading article being cotton, its movement is as follows:

1848-49	Bales	Pounds	Tons required	Per lb	Am't of freight
Exported abroad	2,227,844	801,137,600	667,425	1½ ct.	\$13,367,064
Exported coastwise	785,324	314,129,600	209,417	½ ct.	1,570,648
Total	3,013,168	1,205,267,200	876,842		\$14,947,712

This coastwise export is merely the first movement south to north, and does not embrace its ultimate navigation in small vessels. As an indication of the freights on other articles, it may be stated, that the quantities of the eleven articles of sugar, molasses, flour, pork, bacon, lard, beef, lead, whiskey, corn and tobacco, which left New-Orleans for the year 1849, both foreign and coastwise, required 101,900 tons, and the freights were worth \$2,467,749. Of the quantities sent coastwise of these articles, a considerable portion was subsequently exported abroad from northern ports, giving a new freight to shipping. Inasmuch as that, of all the exports of the country, 75 per cent. is based upon southern produce, and, as we have seen in the above table, which is from official

sources, nearly all the shipping is owned at the North, and the rates of freight, in usual years, are graduated by that of cotton, an estimate may be made of the whole freights. From northern ports these are much less than from the South; thus, while the average is about \$22 from the South, with primage abroad, it is about \$7 per ton to the northern ports. It is also the case that vessels are built to carry nearly 50 per cent. more than their registered tonnage, and also that many of the voyages are to the provinces and the West Indies. Hence, the average outward freights are not over \$15 per ton. The American tonnage cleared from the United States in 1848, was 2,461,280, which, at \$15 per ton, allowing two-thirds for southern origin, gives the following sums:

	Tons	Northern origin	Southern origin	Total
Outward	2,461,280 at \$15	\$12,306,400	\$24,612,800	\$36,919,200
Inward	2,393,482 at 8	9,573,928	9,573,928	19,147,856
Total Foreign trade		\$21,880,328	\$34,186,728	\$56,167,056
" coast between North and South		2,000,000	6,000,000	8,000,000
Total		\$23,880,328	\$40,186,728	\$64,167,056

The inward freights are of merchandise, on which the northern shipping makes a freight, the northern importer and jobber their profits, and on which, probably, one-half is sold and paid for at the South. In this are included freights from Europe, South America and the East Indies, ranging from \$10 to \$25 per ton, and forming a large part of the whole; so that the average will not form less than \$6 per ton of carrying capacity, or \$3 per ton register. The freights of vessels in the foreign carrying trade, from Cuba to Europe, &c., are not included.

The imports and exports of the Union were, for 1848, as follows:

	Imports	Exports
Free states.....	\$137,367,826.....	\$75,985,050
Slave states.....	17,631,102.....	78,051,386
Total.....	\$154,998,928.....	\$154,036,436

This embraces the large exports of farm produce from the North for the famine year, and is therefore above an average for that section. Under the estimate that one-half of the imports are consumed at the South, then \$60,131,638 must pass through northern hands, leaving at least fifteen per cent. profit—say \$9,000,000, including insurance, &c. In return for this, an amount of bills, drawn against southern exports, must be sold in New-York, equal to the difference between southern imports and the amount of their exports—say \$60,000,000. The negotiation of these gives, at least, \$1,000,000 more to the North. On data furnished by the census of 1840, it was ascertained that the value of the manufactures of the New-England and Middle States was \$182,945,317, including 500,000 bales of cotton worked up at the North. Of this, one-half—say \$90,000,000—finds sale in the southern states, and those of the West, which, delivering their produce on the great water-courses, necessarily form part of that region, at a profit to manufacturers, jobbers, forwarders, expresses, insurance, &c., of twenty-five per cent., or \$22,250,000. There arrived at New-Orleans last year, by the Mississippi River, of produce from all the western states, a value of \$36,119,098, and probably \$14,000,000 more found sale in the slave states through smaller avenues and at shorter distance, making—say \$50,000,000; for all which was received in return, sugar, coffee, tobacco, materials of manufacture, and domestic bills drawn on the North against produce and bills of exchange. These sales of produce probably realized twenty per cent. profit, and it is from the proceeds of their sales of produce to the South, that the West pays for its purchases of goods at the East. There is also, probably, \$20,000,000 of northern capital drawing large profits in southern employments. Stocks, shares of companies, and interests in firms, which, with the amounts expended by southerners coming north in the summer season, must yield \$6,000,000. These rough estimates of the

profits of the North by southern connection, may be summed up thus:

Freights of Northern shipping on Southern produce.....	\$40,186,728
Profits derived on imports at the North for Southern account.....	9,000,000
Profits of exchange operations.....	1,000,000
Profits on Northern manufactures sold at the South.....	22,250,000
Profits on Western produce descending the Mississippi.....	10,000,000
Profits on Northern capital employed at the South.....	6,000,000

Total earnings of the North per annum.....\$88,436,728

These estimates are all exceedingly small, and do not embrace a variety of transactions, which form the basis of most corporate profits. It might also embrace the profits on sales to western states, which are enabled to pay by their sales to the South. Now, when we reflect upon the whole transactions, out of which spring these profits enumerated, and also the employment of a very large proportion of the northern people, as well as one-half of the whole external trade of Great Britain, with all those remotely dependent upon the persons actively engaged in the trade, we begin to form some idea of the magnitude of the crime premeditated by the Van Buren free-soil abolition party.

If we throw together the capital and numbers of persons directly occupied in the manufacture of cotton, with the number of bales required annually to keep them in employ, we arrive at something like the following result:

	Bales consumed, 1849	Hands employed	Capital invested
Great Britain.....	1,819,422..	480,000..	\$366,000,000
Europe.....	983,943..	233,000..	183,000,000
United States.....	520,000..	160,634..	122,000,000
Total.....	3,323,365..	873,634..	\$671,000,000

Of this large consumption, 2,800,000 was furnished by the southern states, and it supports, through the profits of its fabrication, not less than 4,000,000 whites; and the cloth so produced furnishes comfortable clothing to millions more, who otherwise would suffer from want of it. If, by any convulsion, the supply of raw materials should be cut off, how wide-spread would be the resulting destitution and ruin to all nations! The northern states have rapidly increased of late years in their ability to work up the cotton. Thus, in 1841-'42, the growth was 1,633,574 bales, and the United States manufacturers took 267,350, or fifteen per cent. The average growth of the past two years has been 2,500,000 bales, and 502,400 bales, or twenty per cent., has been wrought up in the United States. Thus the national industry of the North is developing itself with a rapidity that, in a few years, will cause it to require the whole of the southern production to the exclusion of European rivals. The progress in this direction is precisely in the ratio of the

increase of capital. Superior wealth is all the advantage which England has over the Union, and she is fast losing that advantage. The only way in which she can check this tendency, is by promoting sectional jealousies, in the view to cause a political dissolution of the Union.

A separation of the Union would involve the immediate connection of the whole South, with Mexico and the West Indies, with England; and under the exasperation that would inevitably attend such an event, the North—

its ships, goods, produce and traffic—would at once be excluded. The rigor of that English exclusive system which before drove the independent northern states into a union with the South, would apply with ten-fold force; and while the South has now become necessary to every country of Europe, the North has nothing to offer—being, in fact, a rival to each and all in manufactures. The areas of the free and slave states, are as follows:

AREA OF THIRTY STATES, WITH LANDS, SOLD AND UNSOLD.

	Area, acres	Area sold in new states	Money received by U. S.	Unsold area new states	Population 1840
Free.....	290,777,600	59,007,332	\$91,687,565	199,935,398	9,918,864
Slave.....	599,275,502	41,202,324	45,085,512	145,977,945	7,513,008

The area of western lands unsold, with a large portion of that already sold, is entirely commanded by the Mississippi and its tributaries, and the possessors of its delta are the controlling power. The introduction of manufactures is most rapidly progressing in the northern slave states, and as these become less able to compete with the more southern lands in agricultural productions, the impulse will be enhanced, with greater success, that the improving prospects of the raw material promises to enhance the capital applicable for that purpose.

Every year the progress of affairs makes the North less necessary to the South, and makes the latter more necessary to England and western Europe. The face of affairs is entirely changed since General Pinckney, in convention, assented to the proposition, giving Congress the right to pass laws regulating commerce by a simple majority, on the ground that it was a boon granted to the North, in consideration of the necessity which the weak South had for their strong northern neighbors. The cotton trade then scarcely existed, but the material has now been spun into a web which binds the commercial world to southern interests. The North now has far more need of the South to cherish her commercial and manufacturing interests, than when the merchants of Boston, headed by John Hancock, petitioned Congress to the following effect:

"Impressed with these ideas, your petitioners beg leave to request of the very august body which they now have the honor to address, that the numerous impositions of the British on the trade and exports of these states may be forthwith contravened by similar expedients on our part; else, may it please your excellency and honors, the commerce of this country, and, of consequence, its wealth, power, and perhaps the Union itself, may become victims to the artifice of a nation, whose arms have been in vain exerted to accomplish the ruin of America."

The South is now, with its institutions and capabilities, possessed of that on which half

the manufacturing and commercial interests of the world depends. It is the source whence the only means of employing and feeding at least 5,000,000 whites can be drawn, and without which, nearly \$1,000,000,000 of active capital in ships and factory would be valueless. A country and institutions so important to the welfare of humanity at large, are not to be trifled with. This country forms one-half of our glorious Union, on terms agreed upon by those immortal men who separated from England, because they would no longer suffer the continuance of the African slave-trade; but, in its independent position, the South holds the welfare of other nations almost entirely within its keeping. The capital and laboring abilities of England are such as to afford the South an outlet for its staple, should it exclude all other customers. The result of such a movement, would be to force other countries to draw their goods from England only. On the other hand, the manufacturing progress of the North is such, that in a few years she may absorb the whole of the southern staple, and place herself at the head of the manufacturing interest for the supply of the world. To the South, it is comparatively of small importance, whether England or the North obtains this mastery. Between the North and England, it is a mortal duel; and yet, in the crisis of this struggle, there are to be found persons at the North so destitute of all moral and political acuteness as to attack, in violation of the sacred pledge of the Constitution, those institutions which it guarantees, and which are so necessary to the interests of humanity.

The continued harmony of the United States, permitting the industry of each section to furnish materials for the enterprise of the others, the reciprocity of benefits and uninterrupted interchange of mutual productions, facilitated by continually increasing means of intercourse and accumulation of capital, are laying the foundation for an empire, of which the world's history not only affords no example, but the magnitude of which the wildest dream of the most imaginative of the

world's statesmen has failed to conceive. In this undisturbed progress, the condition of the black race is being elevated on the swelling tide of white progress. Inasmuch as that the first slaves imported were, under their new masters, vastly superior in condition to the nude cannibals by whom they were sold, only because avarice triumphed over appetite, so is the condition of the slave of the present day far above that of his progenitor a few generations back. The black race, in its servitude to the whites, has undergone an improvement, which the same race, in its state of African freedom, has failed to manifest. By whatever degree, physically and morally, the blacks of the United States are superior to the nude cannibals of Africa, are they indebted to the white race for its active, though not disinterested, agency. That process of improvement has not ceased, but is ever progressive in the train of white advancement. The huge lumber-car has no vitality of itself, but, attached to the resistless locomotive, moves forward with a vigor not its own. To cast off that race, in dependence on its own resources, is a singular manifestation of desire for its progress. As an indication of the progress in respect of freedom, which that race makes as it is trained to endure it, we may take the numbers classified upon the continent, for three periods, according to the United States census :

	SLAVE STATES		FREE STATES	
	Slaves		Free Blacks	
1800.....	857,095.....	61,441.....	73,100.....	
1830.....	2,005,475.....	182,070.....	137,525.....	
1840.....	2,486,226.....	215,568.....	172,509.....	

In 1800 there were 36,946 slaves in what are now free states. The emancipation of these increased the free blacks in the free states; but the multiplication of the free blacks in the slave states is much more rapid, and is increasing on the proportion of slaves. Thus, the free blacks in those states, in forty years, reached 25 per cent. of the original number of slaves—the emancipation being always 10 per cent. of the increase. This has been greatly retarded by the abolition excitement. It is observable that the free blacks do not emigrate from the southern states. Their social position there is less onerous than the nominal freedom of the North. The increase of free blacks at the South, in forty years, was 250 per cent., and, at the North, 140 per cent. It is undoubtedly true, that the unconquerable repugnance of the North to permit the presence of blacks, if they can possibly be excluded, has, to a very great extent, checked emancipation. Thus, the constitution passed by Ohio on its organization as a state, with the black laws, passed by its legislature, by preventing the ingress of slaves, greatly retarded emancipation. To suppose that the ordinance of 1787 stopped

slave migration is a great mistake. It was the opposition of the white settlers to the presence of negroes that alone prevented it. Had any number of slaves been settled in Ohio, they would, ultimately, as in New-York, have been emancipated, and would, by so much, have reduced the existing number of slaves. Thus, notwithstanding all the false sympathies of the North, the progress of emancipation at the South is quite as rapid as it should be, to avoid convulsions. It is more than probable, that, when the body of free blacks shall have become more considerable, they will supplant slaves as domestic servants, until slavery becomes, in those states, almost entirely predial. There is no comparison between the well-trained free black, subject to dismissal for misconduct as a domestic servant, and the slothful slave who has no fear of loss of place before his eyes. The free blacks must, necessarily, crowd out the slaves by a gradual and regular process, as the latter become more fitted for freedom. It is an inevitable law of political economy, that slavery must cease where trade is free and the population of freemen becomes more dense. This process is gradually and surely elevating the black race; and, to disturb it by any means, is at once to plunge this incapable race into hopeless barbarism; as complete as that which pervades Africa. An earnest desire for progress, political and social, for both races, as well on this continent as upon that of Europe, will find, in a firm adherence to the compromises of the Constitution, the only sure mode of accomplishing that double end. To preserve the harmony of the several sections, by refraining from an attack upon that state of things which we may wish did not exist, but which we cannot remedy, is the only mode of ameliorating them. Those political schemers who seek for their own advancement amid the ruins of an empire, the desolation of a continent and the barbarizing of a race of men, will find, in the awakening intelligence of the people, the fiat of their own destruction.—*Kettell*.

UNITED STATES—PROGRESS OF THE REPUBLIC.—EARLY SETTLEMENT OF THE COLONIES; HISTORICAL NOTES OF THE GROWTH OF TERRITORIES AND STATES; DISCUSSION OF GREAT BOUNDARY QUESTIONS; ACCESSIONS OF NEW TERRITORY AND THE PRINCIPLE INVOLVED; PRESENT EXTENT OF THE AMERICAN UNION AND ITS DANGERS, ETC.—The definite treaty of peace settled between the United States and Great Britain, in 1783, determined the boundaries of the two powers in North America. The Mississippi, from a point west of the Lake of the Woods and southward to the 31° of latitude—that parallel of latitude and lines drawn upon the rivers Apalachicola, Flint, St. Mary's, etc., constituted the boundaries of the French and Spanish possessions on

the West and South;* and the North the St. Croix, the St. Lawrence, etc. rivers, and the lakes, separated from the Canadas.

The territory embraced within these lines was all that the original thirteen states occupied or claimed, and it was secured to them forever in the same treaty which secured their independence.

It will be not without interest to mark in a hurried manner the progress and extension of settlements and government in these original states, since from them as a starting point the most interesting contrasts may afterward be made. These states were the great pioneers of the Union, and out of them and such additional acquisitions of territory as they have been enabled to make from foreign powers, have been created a great body politic which has amazed the world by its extent and power.

Virginia.—The year 1607 witnessed the first permanent settlement of any English colony throughout all this vast and then howling region. Under a patent from King James, one hundred emigrants, in April of this year, landed in the vicinities of James River and set about the construction of the town which adopts the name. In 1612, the Virginia company received an additional grant of territory, which included the Bermudas and all the islands within three hundred leagues of the coast.

Massachusetts.—In 1620, the Mayflower, so celebrated in history for the daring band of spirits who were assembled in her cabin, landed in the proximity of Cape Cod, and, after "solemn prayer and thanksgiving," forty-one in number, excluding women and children, signed an instrument of government. The contract with the names of its subscribers is now preserved in Morton's "New-England Memorial."

A patent was signed the same year, which was the basis of all subsequent ones in this region, granting to the Duke of Lennox and his associates, the right of planting, ruling, ordering and governing New-England in America. The grant included all territories between the latitudes 40° and 48° north from ocean to ocean.

In 1620 was granted to John Mason the territory about the river Pascataqua and now comprised within the state of *New-Hampshire*. This territory was included within Massachusetts until 1680, when it was formed into a separate government, much, it is said, against the will of the inhabitants.† The next question of boundary between the two governments was settled in 1740 by the Lords of Council in England.

The original patent for *Connecticut* was signed in 1631, and two years afterward the

first house was erected there by some adventurers from Plymouth, in defiance of the menaces of a Dutch fort upon the Connecticut River.*

John Clark and others, eighteen in number, disgusted with religious differences in Massachusetts, purchased a small island from the natives, which afterward came to be known as *Rhode Island*. The fertility of the soil and the pleasantness of the climate soon attracted many people to their settlement.

In 1609, Henry Hudson, an Englishman, in the service of the Dutch, following the track of the Cabots a century before, landed on Manhattan Island. Fifty-five years after, the Dutch colony which had made a settlement here formally surrendered to an English fleet under Nicolls, and the name of New Amsterdam, in honor of the brother of the king, yielded to that of *New-York*.

The Duke of York conveyed, in 1664, a part of the patent granted him by Charles II. to Lord Berkely and Sir George Carteret, under the title of *New-Jersey*—the family of the latter being from the Isle of Jersey. In ignorance of this, Gov. Nicolls, of New-York, granted, in the same year, a patent for the same tract—and under it the territory became a resort for reputable farmers and families from New-England and Long Island.

In 1640 a purchase was made on behalf of New-Haven, from the Indians, of certain territory on both sides of the river and bay of *Delaware*, for the purpose of trade and "extension of the Gospel." Fifty families were immediately settled. The Dutch, of New Netherlands, at first opposed this measure as an encroachment, burnt the trading house that had been erected and seized upon the goods.

Lord Baltimore, received from King Charles, 1632, a title to the province of *Maryland*, named in honor of Henrietta Maria his queen. Two years after, Calvert, with a colony of two hundred Roman Catholics, arrived in the territory and fixed a settlement.

In 1662, the Earl of Clarendon and others, received a grant of the immense territory lying to the southward of Virginia, between the 31° and 36° latitude, which in honor of the queen was called *Carolina*. The first colony under the charter came over in 1667 or 1668.

William Penn, the celebrated "Quaker King," was constituted by the charter of Charles II, absolute proprietor of the province of *Pennsylvania*. He immediately proceeded to dispose of shares, and a colony at once came over and settled above the confluence of the Schuylkill and the Delaware.†

The parliament of England having purchased the proprietary of government of Car-

* See Treaty in 2 Holmes's An., 529.

† Berknap's New-Hampshire.

* Trumbull's Connecticut, 13.

† Proud, 170—196.

olina, divided, in 1729, the territory into two distinct and separate governments, known afterward as *North and South Carolina*.*

To the southward of these colonies a large territory remained still unsettled, which caused some uneasiness in England, lest the Spanish, from the neighboring province of Florida, or the French from the Mississippi, in the desire of more easy communication with their West India possessions, should seize upon and appropriate it. A great movement of philanthropy was also at work at the same time in England. A double purpose of patriotism and philanthropy it was thought would be subserved by settling this region, viz.: "to obtain possession of an extensive tract of country, to strengthen the province of Carolina, to rescue numerous people in Great Britain and Ireland from the miseries of poverty, to open an asylum for persecuted and oppressed Protestants in different parts of Europe, and to attempt the conversion and civilization of the natives." The government was vested in trustees. In 1733, Oglethorpe reached the limits of *Georgia*, so called in compliment to the king, with one hundred and sixteen persons intended for a settlement.

Thus in a period of one hundred and twenty-four years from the landing on James River to the enterprise of Oglethorpe, was effected the planting and colonization of those thirteen original commonwealths, which were destined in so short a period to shake off the foreign dominion which was asserted and maintained over them, by a series of unparalleled victories over the troops of one of the proudest and most potent empires in the world, establish for ever their right of independence and place among the nations of the earth.

The territory held within the jurisdiction of these thirteen states, after the Revolution, embraced vast, uninhabited and almost unexplored regions, stretching far beyond the mountains and lakes and the outermost limits of civilization and government. Each of the states holding such territory succeeded of course to all the rights of empire and sovereignty over it as fully and effectually as these rights had existed in the hands of the English king himself. There was nothing in the union of the colonies for whatever purpose to impair that right. Pending the adoption of the articles of confederation however, when it was of the last importance that the states should present an undivided front against the common enemy, Maryland refused her adhesion to the "*articles*," unless an amendment were made appropriating the uncultivated and unpatented lands in the

western part of the Union as a common fund to defray the expenses of the war.*

We then discover at how early a period it was perceived, that if any one government, consolidated or federal, succeeded that of Great Britain throughout her American possessions, this government was the only proper repository of all rights to unoccupied territories, either then existing in the hands of its members or to be acquired by future treaty regulations with the Indians or with foreign powers.

It is certain that New-York, soon after the proposition of Maryland, admitted the importance of the principle, and led the way in ceding her territories to the Union by the acts of her legislature in 1779 and 1780 and the final transfer of 1781. She was followed in 1784 by Virginia, in 1785 by Massachusetts, 1786 by Connecticut, and in 1787 by South Carolina. North Carolina and Georgia made similar concessions.

On the adoption of the federal constitution in 1789, the right of Congress over all this territory was distinctly specified in the third section of the fourth article: "Congress shall have power to dispose of, and make all needful rules and regulation respecting, the territory and other property belonging to the United States."†

Two years before the institution of the present *constitutional* government, 1887, Congress passed an "ordinance for the government of the territory north-west of the river Ohio," which had been relinquished by the states of Virginia, Massachusetts, Connecticut and New-York.

As early as 1769, Daniel Boone had plunged into the wilderness west of Virginia and begun the settlement of what was afterward known as the district of *Kentucky*. In 1790, having fulfilled the requisite conditions, this district applied for admission into the Union, and was received as an independent state the following year, constituting the first of the new class of states in which the Union is divided, subsequent in origin to the Revolution, and the constitution.

A few days afterward, *Vermont*, embracing the territory which had been included in the New-Hampshire grant, but which had declared itself independent, by the name of New-Connecticut, alias Vermont, and settled its disputes with New-York claiming once a jurisdiction within its borders, petitioned for admission into the Union and was received as another independent state.

The jurisdiction of North Carolina having been extended over the district of *Tennessee* during the Revolution, emigration flocked in

* English Statutes, v. 708—714. Holmes's American Annals, i. 553; ii. i.

* Kent, i., 210. Journals of Congress, vii. Congress, by acts of 1780, called for these cessions by the States.—Kent, i., 259.

† As to the new states' power over their lands.—Kent, i., 259.

that direction, and by 1796 the materiel existed for a state, which was formally admitted into the Union.

Ohio, included within the North-West Territory, which had been penetrated by Col. Clarke and the Virginians in 1779 and which begun to be settled in 1788, became one of the American states in 1802, and settled its constitution.

These states were all carved out of the original territories to which our country succeeded by the treaty of peace in 1784, and the possession of which was guaranteed and defined by that treaty.

About this period began a new era in the progress of America, the importance and influences of which cannot be held in too serious a light. From the opening of the Revolution, or for about twenty-six years, the states had been content to grow and extend within the limits assigned by the mother country. These limits were vast enough for the proudest empire. It was impossible, however, that a people who had possessed themselves of this much could remain satisfied whilst fertile and still more extensive regions surrounded them upon every hand, claimed and sparsely populated by nations entertaining little if any sympathies with them. The restless enterprise too and acquisitiveness which are inherent in all republics, were not likely to operate with a diminished force here. It is, perhaps, too early to determine whether this desire of extensive territory, which, dating from the early part of the present century, has been growing every year more intense with our countrymen, will be, in the event, for the advantage or detriment of the republic. Guided and restrained by high moral considerations and political wisdom, it has hitherto, as we believe, so far as the results have been manifested, been subservient to the true interest of the country. There is a mean, however, which can easily be transcended, and perhaps that mean has been already reached. Territory may be purchased at too dear a cost, when it is unnecessary, or when, even if necessary, the rights of others must be invaded and protracted wars undertaken. Will past moderation content our government in the future; or will it, emboldened and stimulated by success, aim for new accretions of sovereignty each year, from newly acquired soil, in the mere wantonness of dominion? We confess that, from the spirit extensively manifested, and the doctrines promulgated in high quarters, in regard to the wonderful elasticity and expansiveness of our Union, and its capacity for indefinite extension, some apprehensions may arise in this particular. It is not difficult to predict where such a state of things would end. Peace is the mission of republicanism, and this is inconsistent with such a spirit. Ter-

ritorial aggrandizement cannot long be conducted by any one nation without provoking uneasiness and animosities upon the part of others. War is almost a natural concomitant; and with continued wars come the dangers of military despotism, growing out of the extraordinary adulation and deference everywhere accorded to a successful general.

But supposing peace were rigorously preserved, and neighboring states, impressed with the beauties of our system, were to become solicitous of merging a portion of their sovereignty, and of sharing a part of our greatness; ought it not to be our principle, in the liberal spirit, as it is said of freedom, like that of Christianity, to receive them into the fold, like younger brothers in manhood and republicanism? I know that there is something attractive in this manner of presenting the case, and that ardent and enthusiastic natures are prone to be hurried away with it. But there are higher considerations than those of mere feeling. Have we not duties toward ourselves higher than those which relate to the world at large? Our own salvation should be the first and the last consideration. Mere territory and mere numerical force is nothing to a nation. We may degrade, by continued annexations, the anglo-Saxon element, which has been the moving influence of the republic in all its history, by introducing to the full and unrestricted rights and privileges of republicanism and liberty, races and people who not only have not been tutored in these institutions for several hundred years as we have, but in reality have been plunged in the lowest depths of ignorance, bigotry and political slavery. Such repeated accessions can only pave the way for the ruin of the republic.

Though our federated system be beautiful and an improvement upon any of the previous forms of free governments, yet we cannot but think the limits of safe extension, though ever so well guarded, are not as wide as many imagine. The remote states will cease to have their proper influence, and such will come to be the diversity of interests almost irreconcilable, that almost any uniform legislation will become unequal. The boundaries of state and federal powers cannot be so well observed where the number of states becomes very great. The doctrines of states' rights too, which have been reserved to them by the constitution, are much more in danger of perishing when there are many than a few states. These doctrines are much more strictly held by the original thirteen states than by any of the new ones; and the reason is, that the one class consider themselves the *creators* and the others the *offspring* of the constitution. The extension of *federation* naturally leads to *consolidation*, after a certain point is passed.

A strong government, as it is called, will become absolutely necessary, to keep within their orbits fifty or a hundred commonwealths scattered over the continent, for example, from Hudson's Bay to the South Seas. What is true for the extreme case will be true for some intermediate one. A vast consolidated government can only become a *despotism*—since it must legislate for interests too remote to be understood or to excite any regard.

If the choice of the two conditions, an *indefinite* territorial extension of the republic, or the limits with which it was received from Great Britain in 1783, were given, though up to the present moment no little of our national glory and progress has been derived from these extensions, we would unconditionally and without hesitation choose the least of the two evils and elect that our country should for ever be restricted within its limits at the period of the constitution. Within these bounds, even then, she could maintain rank as one of the first powers on earth.

The population of the United States had no sooner spread beyond the mountains and into the northwestern territory, than it was perceived, some natural and convenient outlet to the ocean was demanded for their productions. The Mississippi receiving in tributaries many important American rivers, might be considered as commanding their commerce; and this "inland sea," being held in common with a foreign power, claiming an exclusive jurisdiction over portions of it contiguous to the city of New-Orleans, naturally excited the greatest uneasiness. The danger of the concession we were about to make during the Revolution, when solicitous of a Spanish alliance, of the exclusive navigation of the Mississippi to Spain,* became most clearly perceived and acknowledged. The Spaniards, after the treaty of peace, resisted with the Americans the free navigation of the river; but, on the trading expedition of General Wilkinson reaching New-Orleans in 1787, they were disposed, in the hope of effecting a disunion, to offer this boon to the states westward of the mountains, on the condition of their instituting a separate empire.† In 1795, the treaty of St. Lorenzo, conceded the freedom of the river to the United States, and of the city of New-Orleans, for ten years, as a depot for its produce. In the difficulties which immediately ensued upon the treaty, and the manifest hostility of Spain toward the United States, the Americans perceived the imminent danger for their position, and the almost essential necessity of possessing an entire control of the river, throughout all its course to the

sea. The French, too, in the policy of Bonaparte, were solicitous of regaining the extensive empire of Louisiana, which, in an unhappy moment, they had ceded to Spain. He succeeded in obtaining a re-cession, which excited even more lively apprehensions in our country. The whole West was in one flame: "If Congress refuses us effectual protection," was the strong language, "we shall adopt the measures which our safety requires. No protection, no allegiance!" Mr. Monroe was dispatched to Paris, with a view of immediate negotiations in the matter, and Mr. Rost, of Pennsylvania, went so far as to move in the Senate, that five millions of dollars and fifty thousand men be appropriated for the conquest of Louisiana. The negotiations of Mr. Monroe were successful, and the purchase of Louisiana effected for sixty millions of francs and the assumption of certain claims due on the part of France to American citizens.

Thus was acquired, peaceably, the right to an almost boundless territory, whose value Napoleon considered, according to Marbois, incalculable. Out of this territory, we shall directly see, some of the most important states in the Union have been carved.

The purchase does not appear to have been premeditated, or even desired. The instructions of Mr. Madison, Secretary of State, to the American Commissioners, related entirely to the island of New-Orleans and the Floridas; the first of which was estimated at four times the value of the second, and West Florida as double that of East Florida. The commissioners announced their inability to treat beyond these, but discovered very soon that such a limitation would prevent the possibility of a negotiation. The policy of Napoleon was to secure the whole of Louisiana from falling into the hands of Great Britain; and this he now effected in defiance of the remonstrances of Spain, who had reserved a right of pre-emption in the territory.*

In regard to the boundaries of this extensive region, everything remained in doubt and the greatest uncertainty. The Spaniards had even denied, in 1780, the extension of any American territory as far westward as the Mississippi; though the treaty of 1763, between Spain and Great Britain, was quoted with great effect against the pretension. They now sought, by every means, to restrain the limits of Louisiana. The United States claimed the river Perdido, on the east, and the Rio del Norte, on the west, as the boundaries of the province when in the hands of France, and previous to the cession to Spain. The parties came to an immediate issue in the matter; and Spain in-

* Marbois.

† Com. Review, i., 400, vol. vii., No. 3.

* In Story's Commentaries are given the grounds of opposition in Congress against the treaty.

stituted the government of Baton Rouge over the territory (about 156 miles in length and 50 in breadth) embraced between the Mississippi and Pearl rivers, which was retained by her until the inhabitants, in 1810, renounced the dominion of that power, and claimed the protection of the United States. We shall see hereafter that a final settlement of all these disputes was not made until the year 1819.*

The province of *Louisiana* was now divided into two sections. The most southern, or that which constitutes the present state of the name, was organized under the title of the *Territory of Orleans* in 1805; and having adopted a constitution, was formally admitted into the Union in 1812.

After the division of the North-West Territory, in 1800, that portion of it extending

westward to the Mississippi, and northward to the lakes, was denominated the *Indiana Territory*. It embraced all the white settlements upon the Illinois and Upper Mississippi, as well as those in the vicinity of Detroit. During the late war, the different expeditions which traversed this and the other neighboring territories, says Dr. Monette, were virtual explorations of the fertile and beautiful country, by thousands of hardy, young and enterprising pioneers. In 1816, a sufficient population having been attracted by the alluring prospects, *Indiana* was admitted into the Union.

The extensive region embraced between the Mississippi and Chatahoochee rivers, to the northward of the 31° parallel of latitude, was established in 1798, as the *Mississippi Territory*. In 1816, the white settlers were

* In the treaty of peace of 1783, Spain was permitted to accede. The British, in making this treaty, for some time insisted upon the Ohio River as the western boundary of the United States, but finally yielded the Mississippi. The accession of Spain was promised on the condition only, that the Americans relinquish all claims west of the Alleghany mountains, and to the navigation of the river. Mr. Jay, dispatched to Spain, was unable to effect a treaty on account of these pretensions. They were sustained by France, as the letter of Rayneval, Secretary of Vergennes, and the intercepted letter of Marbois, evince. These facts induced the American negotiators to settle a treaty with Great Britain without consulting the French Court, notwithstanding their instructions to the contrary. A secret article in this treaty, provided that a line due east from the mouth of the Yazous, on the Mississippi, and not the 31° of latitude, should constitute the southern boundary of the United States, in case Great Britain should recover possession of the Floridas. On this account, perhaps, the Spaniards refused to deliver the territory between these lines, claiming it as Florida until 1798. About this period France became solicitous of regaining her old possessions, and succeeded, by the treaty of Ildefonso, in her purpose. This was at a period when the treaty of Amiens having been broken, war was daily expected by the United States with that republic. It was seen how dangerous to us it was that such an enemy should command the approaches of the whole western country. Spain had already, in violation of her stipulations, refused all right of deposit for our commerce at New-Orleans, or any other point within the territory. Great Britain, too, was opposed to the recovery of Louisiana by France. The purchase of Louisiana was effected, and this led to embarrassing disputes about boundaries. Spain, who was to have ceded to France precisely what she got from her, maintained that nothing east of the Mississippi, except the island of New-Orleans was received. Nothing beyond this could pass to the United States. This construction, it appeared afterward, was fully admitted by France, and with much force. An American port of entry which was established within the region, on the remonstrance of Spain, was immediately given up. Mr. Monroe and Charles Pinckney at the court of Madrid, were instructed to negotiate a treaty, demanding to the Rio Perdido, on the east of the Mississippi, and to the Rio del Norte on the west, and from the sources of the last river, west of all the rivers emptying into the Mississippi. Spain considered the pretension as altogether unfounded. The American ministers submitted a final proposition, which was not accepted—viz., that they would relinquish all claim for spoiliations in Spanish ports, and damages at New-Orleans, and all territory west of the Missis-

siippi, from a line along the Colorado to its sources, and continued to the northern limits of Louisiana, west of all rivers emptying into the Mississippi, on condition of having ceded to them the territory east of the Mississippi. This was in 1805. The Spaniards refused to receive it, and denied the right of the United States even to the eastward of that river.

Bonaparte, now emperor, entered into the contest, and though he had promised his aid to the Americans in the purchase of the Floridas, when signing the treaty of cession, he now declared that any pretensions east of the Mississippi, except New-Orleans, was an aggression upon the right of Spain. Although pending the treaty Marbois had continually adverted to the fact that Louisiana extended to the Perdido and included Mobile, it was afterward convenient in diplomacy to remember none of this. A difficulty on account of boundaries was foreseen, and was pleasing to Napoleon.

Soon after, a note, in the hand-writing of the politic Tallyrand, to our minister, Mr. Armstrong, exhibited a change in the views of Napoleon, and his favorable wishes for the acquisition of Florida by the United States. A hostile attitude was recommended toward Spain. The President of the United States called upon Congress for advice, and received an appropriation of two millions, for the purchase as far as the Perdido. It was said at the time, that the two Floridas could be obtained for \$5,000,000. The mission of Mr. Bowdoin immediately after failed. Pending the negotiation, the Americans took possession to the Sabine, and left all the east subject to negotiation. Gen. Wilkinson was ordered in no case to occupy further than the Pearl River, and only then should New-Orleans be endangered.

Things remained in this condition until 1810, when, on the revolution of the people of West Florida, and their declaration of independence being sent to Washington, Mr. Madison ordered the occupation of the territory, despite of the protests of the British charge.

The Spanish Governor of Florida having expressed a desire of delivering it up to the United States, to prevent its falling into the hands of a foreign power, Gen. Matthews was commissioned by Congress to take possession peaceably, with the promise of re-delivery; or, if this could not be effected, and a foreign power was about to interfere, to seize upon both the Floridas *by a resort to arms*. The act of Gen. Matthews taking possession of East Florida was disavowed by the President. We have already seen the termination of this controversy, which gave us Florida—a territory regarded so important, that the State of Georgia proposed, in 1778, as an amendment to the Articles of Confederation, that it should have the privilege, at any time, of acceding to the federation.—See Pitkin, 21, &c.

embraced within three separate and remote districts. The first district extended from the Mississippi to the Pearl River. The second was situated on the Tombigbee and Mobile rivers. The third, in the county of Madison, 400 miles from Natchez. The inhabitants were almost entire strangers to each other, separated as they were by vast wildernesses. The inconveniences were greatly felt, and it was even proposed in 1815 to extend the boundaries of Louisiana to the Pearl River, thus embracing within it almost the entire present state of Mississippi. Two years after this, the Mississippi Territory was divided, and the western portion authorized to form a state government, preparatory to its admission into the Union. This last was effected on the 10th day of December, 1817.

The North-Western Territory, besides the States of Ohio and Indiana, which were carried out of it, contained the germs of two other great states—viz. : *Michigan* out of the county of Wayne, and *Illinois* out of the county of St. Clair. The Illinois Territory increased rapidly with the spread of Western population, and in 1817 was found of sufficient extent to constitute another independent member of the Federal Union.*

The eastern portion of the Mississippi Territory, after the division in 1817, received the name of the *Alabama* Territory; the population of which, increasing rapidly by emigration from the different southern states, demanded admission into the Union in 1819, and were received by a joint resolution of Congress.

Maine was granted as a province to Sir Ferdinand Gorges, in 1639. In 1649, the inhabitants, deserted by the commissioners appointed to govern them, combined for their own safety. In 1652, at their request, they were taken within the jurisdiction of Massachusetts; but by command of the king, two years after, the province was restored to Gorges, Massachusetts, immediately afterward, resumed her jurisdiction, and purchased the right of the proprietor of the territory. This measure displeased the king, who demanded that the province should be delivered up to him. In 1820, it was separated from Massachusetts, and admitted into the Union.

The territory of Louisiana, northward of the 33° of latitude, was designated, in 1812, by act of Congress, the *Missouri* Territory. Up to 1815, St. Louis, within this territory, was a French town, in which no signs of improvement had been made. A revolution was, however, at hand, and population, as in other portions of the west, flocked to this quarter. In 1817, application was made for admission into the Union, and the great and

agitating question which then arose, and which has, on so many subsequent occasions, under different names, disturbed the councils of the nation, known as the "Missouri Question," is but too familiar to us all. The people of Missouri, as well as of all the southern states, maintained that the rights of persons and property of the inhabitants of Louisiana having been guaranteed to them in the treaty of purchase, any attempt to disturb them in the enjoyment of these rights would be a manifest violation of honor and justice. That Congress had not, under the *constitution*, a particle of right to interfere in regard to the domestic relation of any state, or to prescribe any other conditions of their admission into the Union than those contained in that instrument. That to prescribe the condition of an abolition of slavery, was a gross outrage against the constitution—against the inhabitants of the state—and an insult to the whole southern portion of the Union. Its enforcement would lead inevitably to a dissolution of the Union itself. These discussions were continued, in the bitterest spirit, for nearly two years, upon the floors of Congress, until the Hon. Henry Clay, of Kentucky, introduced that celebrated measure which is known as the "Missouri Compromise," and which alone could have composed the disturbed elements of the country. By this "Compromise" it was agreed, that the institution of slavery, on the west side of the Mississippi, should be recognized in the present state of Missouri, and no further westward than that, or north of the latitude 36° 30'. The state was then formally introduced into the family of the Union in 1821, after a delay of almost four years.

In looking back to this stormy period, which almost, for the first time, threatened the stability of our institutions and government, we cannot but be impressed with the solemn lessons which it inculcates. Almost every possible mode of reconciling the bitter animosities, sectional interests and prejudices, had been attempted in vain. John Randolph, of Roanoke, had even proposed that the southern members retire home, in a body, as having no longer any interest in an assembly which did not recognize their rights and privileges. The sentiment began generally to prevail. In this dark hour for the Union, there was, perhaps, no other hope than in the measure which was adopted. Whether it has been well for the South, however, or whether she did not, in yielding to the exigencies of the times, yield up a most important and sacred principle, which has been the occasion of all the subsequent injuries and aggressions that have been heaped upon her in the halls of Congress, might be worthy of consideration.*

* Monette, vol. II.

* See Statutes S. Car., vol. I. Dr. Cooper's Remarks on Northwest Territory.

Steam navigation having been opened on the northern lakes, population began strongly to set in the direction of the Michigan territory. Its fine, level and rolling plains, its deep and enduring soil, and its immense advantages for trade and commerce, says Dr. Monette, had become known and duly appreciated. The hundreds of canoes, pirogues and barges, with those half-civilized *couriers du bois*, which had annually visited Detroit, had given way to large and splendid steamboats, which daily traversed the lakes. Nearly a hundred sail of sloops and schooners were now traversing every part of these inland seas. The New-England states began to send forth their numerous colonies and the wilderness began to smile. In 1836 a constitution was adopted, and in the following year *Michigan* admitted as another state into the Union.*

The progress of *Arkansas*, constituting a part of the original Louisiana purchase, for the first ten years after its territorial government had been established, was not marked by any considerable improvement. In 1824, the western portion of it was marked off, and set aside for the future residence of the Indian tribes west of the Mississippi. In 1834, the American people, says Monette, became enthusiastic for western lands, and pushed their enterprises even beyond the Rocky Mountains. The planters from Mississippi, Louisiana, Georgia and Tennessee, were attracted by the prolific regions on the Red River, and the fame which they had excited. They, too, even pushed their explorations, following the course of this river into Texas, and spreading throughout that territory, fixed, at its very origin, the American character, and sympathies of that republic. In 1836, the State of Arkansas took its stand among the other proud commonwealths in the American Union.

Florida, whose early history embodies so much of the poetry and romance of our country, and whose possession was so much an object, at all times, with Spain, France and England, came, after the Louisiana purchase, to be no less an object of interest and anxiety with the American people. Its possession by a foreign power was regarded dangerous, and more especially by a power like Spain, who, from her impotency, was incapable of preserving its neutrality, evinced during our contest with Great Britain, and immediately afterward. General Jackson, in prosecuting war against the Seminoles, assumed authority for taking possession of the country in 1818. It was soon after restored, but negotiations were pressed, having for their end its purchase by the United States. John Quincy Adams and Don Onís concluded a treaty of cession, which was confirmed by the Senate in 1821.

By the terms of this treaty, five millions of

dollars, in payments to be made to American citizens, for claims on account of Spanish spoliation, was the equivalent for which Florida was to be annexed to our territory. Without any apparent reason, however, and most unquestionably without authority, Mr. Adams consented to cede away, forever, to Spain, all that territory *westward* of the Sabine, to the Rio del Norte, included within the present state of *Texas*, and so much insisted upon as a part of Louisiana, previous to its cession to Spain, and as it was to be received by us, by the terms of the treaty of purchase. This clause of the treaty produced great opposition in Congress, but was sustained by the North, ever hostile to the growing influence of southern territories, on account of slavery, and only to be propitiated for the annexation of Florida by this sacrifice. Mr. Monroe reluctantly consented to the treaty.

In 1822, Florida passed under the first grade of territorial government. In 1838, a memorial was sent to Congress for admission into the Union. The constitution which had been prepared for the state, proving offensive to the anti-slavery interests, several years were suffered to elapse before any justice could be received at the hands of that body. Finally, in 1845, the measure of admission was effected, as it were, by an artifice. To such miserable extremes is the South pushed whenever the question of slavery is touched.

The Huron District, as it was originally called, west of Lake Michigan, was erected into the territory of Wisconsin. It extended to Lake Superior, to the Missouri River, and included the sources of the upper Mississippi. The country embraced in it, westward of the Mississippi, was called the District of Iowa, erected, in 1838, into an independent territorial government. A convention, in 1844, framed a constitution for the proposed State of *Iowa*. It was approved by Congress, and an act of admission passed, provided that the state limit and restrict, by a new constitution, the boundary which it had claimed. This the people refused, until 1846, when a new constitution was ordered to be framed, and Iowa was formally admitted into the Union, on the 26th of October, of the same year, being the fourth important state growing out of the Louisiana purchase. This state being northward of 36° 30', is, under the Missouri Compromise, of necessity, a free one.

The territory of Wisconsin, from its unrivalled and extraordinary advantages—commercial, agricultural and manufactural—began, about 1842, to increase in population, at a ratio which is perfectly amazing. In the single year 1843, sixty thousand persons are supposed to have entered the territory. The people appeared satisfied with the territorial government for several years after they were entitled to assume that of the state, by virtue of numerical strength. A convention was, however, called in 1846, for the adoption of

* Monette ii., 534.

a constitution, and the state of *Wisconsin* entered the Union, constituting the twenty-ninth of the confederation.

The Spanish treaty, in 1819, concluded between Don Onís and Mr. Adams, we have seen, relinquished to Spain all claim entertained by us to the territory west of the Sabine. *Texas* was, at that period, in the possession of the Indians, and a few Spanish settlements were scattered, at distant intervals, over it. Among these were San Augustine, Nacogdoches, and others upon the Trinity, Brazos, Colorado, Guadalupe and San Antonio de Bexar. These settlements were each under the government of a military commandant. On the Mexican revolution of 1821, and the establishment of the United Mexican States, in 1824, *Texas* and *Coahuila* were admitted as one member. The Mexican Congress were now disposed to grant extraordinary facilities for the colonization of this extensive region, and Mr. Austin received a grant, for the consideration of introducing three hundred families from the United States. Influenced by the most liberal grants, population began to flock from every quarter, into the territory. As early as 1835, six-sevenths of this population were Anglo-American.

The union of *Texas* and *Coahuila*, however, was an unnatural one, and tended to repress the energies of the Texans. They prayed for a dissolution of this union, and that they might be permitted to introduce, for three years, duty free, articles necessary to the prosperity of *Texas*. These prayers were unheeded, and Santa Anna, having, in 1835, overthrown the constitution of 1824, sought, throughout all the states of the confederation, to carry out his usurpations. In this, he was resisted by *Texas*, at the threshold; and that patriotic state established a provisional government, declared its independence, and framed a constitution for the *Republic of Texas*.

We are all familiar with the bloody wars which ensued, and the glorious results which attended the arms of the young republic. The Anglo-American spirit was everywhere triumphant, as it needs must be, where the prize is *liberty*. But let us follow the subsequent career of *Texas*, which is, indeed, so familiar, as to detain us but a few moments.

Scarcely had the battle of San Jacinto been fought, which, in effect, secured the independence of *Texas*, than that state, with almost an unanimous vote, petitioned to be admitted into the Union, of which its population had been almost entirely made. Both Gen. Jackson and Mr. Van Buren, the year afterward, considered the proposition as premature, and likely to affect our friendly relations with Mexico. The independence of the state was, however, immediately recognized by our government, as well as by Britain, France and Holland. In 1842, Mr. Tyler, regarding all difficulties removed by

the complete sovereignty of *Texas* for so long a period, without a hostile foot within her borders, concluded a treaty of annexation, which was submitted to Congress at the same time that Mr. Shannon was dispatched to Mexico to prevent any possible difficulties with that republic. The treaty was rejected by the Senate, as exceptionable in its terms, and Mr. Shannon, being treated with indignity by the Mexicans, demanded his passports, and returned. The annexation, however, was effected by other means. A joint resolution of both Houses was signed by the President, in 1846, defining the terms upon which the annexation should take place; which were, that *Texas* retain her own lands, pay her debts, that her western boundary should remain undefined, and, what was of more importance, that the principles of the *Missouri Compromise* be forever applied to any states which might be carved out of her, north of 36° 30'. On the passage of this law, the Mexican minister at Washington at once protested, and returned home. The Mexican nation at large exhibited the bitterest hostilities and defiance. All the foreign interests in *Texas* were aroused to prevent the possibility of the contemplated union. Captain Elliott and the Baron Cyprey took the lead in a system of intrigues which required the most sleepless vigilance and activity. At their instance, and to prevent annexation, Mexico was willing to forego her darling scheme of conquest, and decree the *independence* of *Texas*. Vain labors, when opposed to national sympathy and destiny. A convention of delegates *unanimously* assented to the proposition of Congress, and framed a state constitution. By a law passed soon after, *Texas* was formally admitted into the Union.

The treaty which has been lately concluded with Mexico, is another great epoch in the history of our Union. We have been secured in the possession of a territory which belonged to us by the terms of purchase from France, in 1803, but which, without sufficient cause, we suffered to escape; and we have also come into possession, beyond this, of an empire, extending to the shores of the Pacific as large, if not larger, than that of all the previous southern states combined. It is enough to form a dozen states, should all circumstances combine. But we have omitted other great territorial adjustments.

No sooner had the Province of Louisiana been ceded to the United States, which cession gave us the unlimited possession and control of the whole valley of the Mississippi, than the importance of this middle empire was recognized, commanding the approaches to both oceans. To the Atlantic, it was already open; but to the Pacific, extended unexplored regions beyond the highlands, which supplied the sources of all the river, emptying into the Mississippi, claimed, it is true, as far north as 49°, as a part of Louisi-

ana, but resisted and opposed by Spain, and with much apparent reason. Mr. Jefferson immediately dispatched Lewis and Clarke to explore this whole region, tracing the sources of the Missouri, and following to the ocean the course of any stream which might afford practical water communication across the continent. It was not until 1819, as we have seen, that Spain was willing to submit to negotiation the disputed questions of boundary and territory, which arose under the Louisiana purchase, or to moderate her opposition to that purchase. In that year, Don Onís, conceiving that a sufficient equivalent had been offered by the American Secretary, agreed to quiet the title of the Americans, so far as Spain was concerned, to all territories westward of the Mississippi, and northward indefinitely of the 42° of latitude, to the shores of the Pacific.

This treaty narrowed down the controversy in regard to these remote northwestern regions, to one between Russia, France and Great Britain, all claiming *undefined* rights in the territory. An imperial ukase asserted the right of Russia to the whole coast north of the 51°; but in 1824 and 1825, that power was willing to relinquish all pretensions to the southward of 54° 40'.

The question came up now between Great Britain and the United States, with little probability of an immediate settlement, and often with scarcely any possibility of an *amicable* one, of the important controversy involving a region twice as large as the whole of France. The Americans claimed to the Russian boundary, by virtue of their Louisiana purchase, of the treaty of 1819 with Spain, of the explorations by Lewis and Clarke, the discoveries of Captain Gray, on the northwest coast, and the settlements on the Columbia River. The British claim of discovery and exploration had also many strong points. Nothing short of a *compromise* could have settled the angry dispute, and to this, very strong parties in both countries were opposed. The whole matter coming before Mr. Webster and Mr. Packingham, the British Minister, in 1842, was, by what is called the Treaty of Washington, happily adjusted, and the line of 49°, which had constituted the previous boundary between the powers, continued to the Pacific Ocean.

In consequence of defective explorations, difficulties arose, under the treaty of 1783, with Great Britain in regard to the northern boundary of the states. An attempt was made in 1802 to correct the error made in regard to the position of the *Lake of the Woods*, but government, in the fear of a conflict with the boundary north of Louisiana, when purchased, did not ratify it. In 1818, the difficulties were still unsettled, and, by a convention of that year, the line was to run west from the Lake of the Woods to the Rocky Mountains, on the parallel 49°.

But in regard to the line passing through the great lakes, the various islands situated in them, the northwest angle of Nova Scotia and the highlands mentioned in the treaty, and also the islands situated in Passamaquoddy Bay, these were left by the Treaty of Ghent to be determined by three several boards of commissioners to be appointed by the two powers.

Two of these boards of commissioners, after long-protracted and exhausting investigation, came to amicable arrangements in regard to the matters entrusted to their charge.

The other board, or that having charge of the Nova Scotia and northeast boundary, failed in coming to any accord upon the subject. Their difference regarded a territory extending one hundred miles to the northward of Maine and southward of New Brunswick. The dispute, according to the terms of the arbitration, was left to the king of the Netherlands, and his decision was made in January, 1831. This award was not confirmed by the United States, on the ground that the arbitrator had transcended his powers.

Thus the Maine boundary controversy, as it is called, continued to be waged for a number of years, threatening hostilities upon both sides, until other elements of discord having been introduced between the two nations, by the events growing out of the Canadian revolution and the burning of the Caroline, the British government accredited Lord Ashburton, as minister extraordinary, to settle, by treaty, all the questions at issue.

Maine, Massachusetts and New-Hampshire, sent or instructed commissioners to represent their rights at Washington during the discussion. The territory in dispute amounted 12,027 square miles, or 7,697,280 acres. For Great Britain it had no practical value, as stated by Lord Ashburton, other than as connective of the different North American possessions of that power. Within this region was comprised the valley of the Aroostook, represented as one of the most beautiful and fertile tracts in that part of the continent.

After protracted discussions it was agreed between the negotiators to divide the disputed region according to a line agreed upon, which gave to England 3,207,680, and the United States 4,489,600 acres. The latter part is represented by Mr. Webster, as four-fifths of the value of the whole territory. To this compromise the commissioners of Maine, Massachusetts, etc., reluctantly, but for the sake of the Union and a consideration of \$250,000, promised by Mr. Webster, agreed, and the final boundary was settled.*

* The letter of Capt. Talcott, accompanying the treaty of 1842, gives the length of boundary between Great Britain and the United States.

Thus have successively arisen and been amicably settled, all of those land and border controversies, which during a greater portion of our history have occupied the attention of congress and the people. Throughout all of them our progress in territory has been gradual and sure, so that at the present moment we have an empire westward of the Mississippi alone, vastly greater than the whole possessions of the Union on the adoption of the federal constitution. Have these controversies forever closed, or will there be others to arise, discussed, and result again in different accretions of territory? With Texas we shall have discussions in regard to her western limits; with Mexico, under the late treaty, it is not improbable, when complete surveys have been made, many difficulties will exhibit themselves, and if, which is not unlikely, there be not moral force enough in that republic to sustain the treaty, we may expect to have the whole question again opened, and then, so far as she is concerned, farewell forever to the peninsula of California and the regions of the Sierra Madre. On the northern borders lies Canada, an easy conquest in time of war. On the Atlantic, and laved by our waters, are the West Indies and especially Cuba. On the Pacific it may be discovered the Sandwich Islands would furnish most excellent ports for our western marine. All of these questions are in the womb of time, and we can only trust that a good and wise Providence will direct and control us through them all—that we may not, like Rome of old, totter and fall by virtue of our so great stature and unwieldy proportions.

Already does our empire extend over a domain wider than that of the Romans in their proudest days of conquest. From the island of Brazos, in the Gulf of Mexico, to the Straits of Fuca, on the northern Pacific; from the Aroostook valley to the Bay of St. Diego, the Union extends its leviathan proportions. The inhabitants of these extreme points, more distant than the shores of the old and new world apart on the usual routes of travel, are brothers and fellow-citizens, under common laws and with a common destiny. It is as though the Shetland Islands and the Bosphoros, Siberia and the gates of Hercules, were made the outposts of an empire which embraced the whole of Europe. For such an empire Alexander and Cæsar sighed in vain, and Napoleon deluged Europe in blood.

In addition to the thirty States forming component parts of the Union, there are four organized *territories* to which a few moments' attention will be given. The territories of the United States are the *nucleus* out of which states are formed. Jurisdiction over them is given by the constitution to Congress, were it not inferable from the

general power implied in all sovereigns to make conquests and govern the conquered territory. The ordinance of 1787 asserted this power and regulated its exercise. In the late territorial organizations the right of electing their councils or legislature is given to the people, though the governor and all executive officers are appointed by the President. Their laws must annually be submitted to congress for approval, and they may send a delegate there with power to debate but not vote. Thus have we in our midst an anomalous government, wherein legislation and representation have no sort of connection. It is a system of colonization as complete as that of England over her American possessions. "Such a state of absolute sovereignty," says Chancellor Kent, "on the one hand, and absolute dependence on the other, is not congenial with the free and independent spirit of our native institutions, and the establishment of distant territorial governments ruled according to will and pleasure, would have a very atural tendency, as all proconsular governments have had, to abuse and oppression."*

The *District of Columbia* is the first in order of present territorial governments, and from its embracing the *capital* of the United States, is the most important. The necessity of fixing some permanent place came early to be perceived. During the Revolution, and after congress held its sessions at Philadelphia, Baltimore, New-York, Lancaster, York, Princeton, Annapolis and Trenton. In 1783 congress, having been insulted at Philadelphia by a mob, removed its session to Princeton to the halls of the college. In 1784, commissioners were appointed to procure a site between two or three miles square, upon the Delaware river, and erect suitable buildings. Under this commission nothing was effected. In 1789, a bill passed one house in favor of a location upon the banks of the Susquehanna. Subsequently the present site was adopted, by virtue of acts passed in 1788, 1789, by Virginia and Maryland ceding ten miles square, upon the Potomac, to the United States, under the name *Connogoecheague*. Within this district congress held its first session in November, 1800. During the past year the Georgetown and Alexandria portion of the district was receded back.

The *Indian Territory*, west of Arkansas, was separated by act of congress in 1824, and reserved to the use of the Indians. The jurisdiction of the United States courts for the district of Arkansas, was afterward extended over it, except in cases of offences by Indians against Indians.

In 1840, population began to set in the direction of the valley of the Columbia River.

In the spring of 1845 the settlers in that quarter were so numerous, that they organized a provisional government, claiming the protection of the United States. In 1842, the emigration from the United States was one hundred and thirty-seven; in 1843, eight hundred and seventy-five; in 1844, one thousand four hundred and seventy-five; in 1845, three thousand. Mr. Polk, in his message of 1846, called the attention of Congress to this territory and advocated the immediate extension of the laws and jurisdiction of the United States over it.

The Nebraska Territory and the Territory of Minnesota, are the remaining two under our system, and advance in population at a rate which evinces they will soon solicit higher rank in the nation. Our paper is already too much extended to admit any further references to them.

UNITED STATES—EARLY AND GROWING COMMERCE OF.—In the following paper we shall hurriedly discuss the commerce of the United States, from the earliest authentic dates to the year 1833, and include a large number of interesting particulars which have been overlooked by us, or been but slightly touched upon in previous articles. The period of 1833 is assumed as a very convenient one for several reasons, among the chief of which is, that the elaborate statistics of Mr. Pitkin terminate there. When time admits, we shall, by examination of the year books of Congress, be able to bring down the subject, with the same minuteness, to the present day, and furnish many important valuable contrasts, &c.

The discovery of America, and its subsequent colonization, gave an impetus to the commercial operations of Europe, which has been enlarging ever since. It is impossible to describe in language sufficiently strong the important bearings of this event upon the history and prospects of mankind.

The colonies of Great Britain in particular, as we may gather from the terms of the charters accorded them, were intended at the earliest period as the poles of an extensive commerce which was to be added to the empire; and, considering the character of the earliest emigrants—hardy, bold, enterprising, conversant with the general principles and advantages of trade by their education in so considerable a trading nation as Britain, and the character of the country they were peopling—extensive seaports, great and innumerable rivers, admirable bays and harbors, fertile soil, and favorable climate, this intention could by no means have appeared unreasonable.* Time has shown that the most enthusiastic expectations fell infinitely short of the reality.

With the struggles of the early colonists

against man and nature we all are familiar. A season of long probation had of necessity to be endured, and it served to form that hardy and resolute character which even yet adheres to their descendants. The New-England pilgrims were the first, from their barren shores and rock-bound coasts, to go down to the sea and essay its perils. To this hardy, daring, and inimitable people, the boons of nature were to be found in the apparent denial of them all. Upon the pathless deep they are described, in eastern gorgeously, in the oratory of Burke, struggling at either pole, amid tumbling mountains of ice, in the frozen recesses of Hudson's Bay and Davis' Straits, beneath the arctic circle, and engaged under the frozen serpent of the south.

Few particulars can be offered of the commerce of the seventeenth century. We know that, in 1647, a trade had been opened from the northern ports to Barbadoes and others of the West Indies; that a collector of customs was appointed at Charleston in 1685, and that the hardy enterprises of the Nantucket whalers received their first impulse in 1690.

At the opening of the eighteenth century, the gross value of the exports and imports of all the American colonies in their trade with all the world, did not exceed £740,000 sterling, or about three and one-half millions of dollars—a sum which does not much exceed the average annual trade of the single states of Maine and Vermont, which are never regarded among our foreign trading states at all. It is less than our export alone of fish, oil, and candles.

A wider field began soon to appear. In 1731, parliament was petitioned to open the African trade to the Americans. The Pennsylvanians were already conducting profitable traffic in Surinam, Hispaniola, the West Indies, Canaries, and Newfoundland. "New-England," said a chronicle of the times, "employs six hundred ships, sloops, &c., about one-half of which sail to England."

The eyes of the mother country came soon to be open to the dangers which threatened her from these aspiring, daring, and refractory children across the ocean. Like Phæton, they were stealing the horses of the sun, and unless arrested in their mad course, it was impossible to foresee the consequences. They had learned, too, to guide the reins of their horses. One may fancy the consternation in parliament. "The only use of colonies," said Lord Sheffield, "is the monopoly of their consumption and the carriage of their produce." The same noble lord remarked, even after our independence—"It would hardly be the interest of the Americans to go to Canton, because they have no articles to send thither, nor any money."* "Nothing, nothing," declared their statesmen in parliament, "can be more prejudicial, and

* Seybert, 54.

* Seybert, and see his note.

in prospect more dangerous to any mother kingdom, than the increase of shipping in her colonies."

One of the earliest acts of British jealousy and restriction was in 1730, and was aimed against the American trade with the Dutch and French colonies. This was followed up, in 1760, by the navigation act, which declared that certain specified articles of the produce of the colonies, and since known in commerce by the name of the "enumerated articles," should not be exported directly from the colonies to any foreign country, but that they should be first sent to Britain, and there unladen, before forwarded to their final destination. What could be more preposterous and suicidal than such a proposition?

The act of 1764 provided further, that no commodity of the growth, production, and manufacture of Europe, shall be imported into the British plantations but such as are laden and put on board in England, Wales, or Berwick-upon-Tweed, and in English-built shipping, whereof the master and two-thirds of the crew are English.

In 1770, Mr. Burke announced, with high gratulation, in the House of Commons, that "our trade with America is scarcely less now than we carried on at the beginning of the century with all the world."

At the same period, Malachi Postlethwait, in an address to the parliament, remarked—"for if once a commercial union should take place between the British continental colonies and the islands, to a certain degree they might think it worth their while probably to hazard the loss of the British markets, for the sake of the gain arising from the general freedom of trade to all other parts of the world. What, then, may become of our British navigation to and from America? When that is lost, will not all our revenues arising from our present American imports be annihilated?—and what will be the state of the public credit of this nation when such a catastrophe should ever happen?"

The statistics of American commerce from the opening of the century until the period of the Revolution, show a continued augmentation. During the troubles of that period, and of those which immediately preceded, some decline was of course inevitable. In 1771 the whole exports and imports of New-England, New-York, Pennsylvania, Virginia, Maryland, Carolina, and Georgia, fell but little short of \$30,000,000, having increased tenfold since the beginning of the century.

The war being closed, and an immense national debt of \$42,000,000 accumulated, exclusive of state indebtedness, Congress found it absolutely necessary to provide a system of revenue adequate to the exigencies of the country. Experience had shown that impost duties could alone be relied upon, and were in other respects the least objectionable mode of taxation. Under the articles

of federation, such duties could only be levied by the states, who thus reserved to themselves the exclusive control over their commerce. This state of things was attended with the most awkward and embarrassing results, and seemed likely at once to destroy all the benefits of the independence which had just been realized. Congress was left without a revenue, and was paralyzed. Foreigners began to exhibit their jealousies of the growing republic, and hostility to its commerce. Great Britain, France, Spain, Portugal, rejected all overtures to enter into treaties of commerce with us.* Some of the states opened their trade free with all nations, thus holding out superior encouragements to their neighbors. New-York in this manner laid the foundation of the empire she now maintains. From the free ports goods might be smuggled into other states. Tonnage duties in different states varied from one to three shillings sterling the ton.

As early as 1781, Congress prayed for the power to levy a duty of five per cent. ad valorem upon imports, to be continued until the payment of the debt. A further power of *regulating the commerce of the states* was moved for in the same body, and negatived there. The states refused even to grant the duty.† In 1793 the proposition was again urgently renewed, limited to the term of twenty-five years, but was not carried into effect.‡

The darkest period was now at hand. The country, it is maintained, was drained of specie by the extraordinary preponderance of the imports over the exports for several years, being often as three to one in regard to Great Britain. The interest of the debt was unpaid, public credit gone, the debt itself considered of little value, and sold to many of its original holders for about one-tenth of its nominal value. Private credit was also much impaired. During the war the collection of debts was in a great measure suspended, and on the return of peace goods were imported by many individuals far beyond their means of payment, and the courts were filled with suits against delinquent debtors. The importing states took advantage of their situation, and levied duties on imports for their own benefit at the expense of the other states.

"Thus burthened with public and private debts, and pressed with taxes, and with a scarcity of money, some of the states, in order to remedy the evil, had recourse to paper money and tender laws; and in one state there was an open insurrection, which threatened not merely the peace and existence of that state, but the peace and existence of the Union itself."§

* Marshall's Washington, p. 5, 182.

† What states refused, Seybert, p. 57.

‡ Pitkin, p. 30.

§ Pitkin's Statistics, p. 31.

Happily for the country and for the interests of mankind, the wisdom of our fathers was adequate to the great emergency. A common danger suggested a convention of the states, which, after able, protracted, and patriotic deliberations, presented to the world the constitution under which, for nearly three-fourths of a century, we have prospered beyond all example. The hand of God should be marked in the result. Under this constitution, one of the first grants of power to Congress was that of regulating commerce with foreign nations, among the several states, and with the Indians.

Soon after the establishment of the present government, Mr. Jefferson, then secretary of state, in an answer to a call of the House of Representatives, made a report, in which he proposed a liberal system of commercial policy. "Instead of embarrassing commerce under piles of laws, duties, and prohibitions," he says, "it should be relieved from all its shackles in all parts of the world. Would even a single nation begin with the United States this system of free intercourse, it would be advisable to begin with that nation.*"

We have already marked the origin and progress of the various commodities which have in the past, and still make up the sum of our export trade, whether the product of agriculture or manufactures.

We propose now a review of the results of the American foreign commerce with all nations since the formation of the government.

Scarcely had we entered into the family of nations, than there opened in Europe the fearful drama of the French Revolution, which in its results seemed once again to have involved the world in chaos. The United States, preserving her neutrality, became the common carrier for all nations, conducted the commerce of their colonies, and supplied them from her own resources with the results of her industry. Never, in the history of the world, was there a more rapid and extraordinary prosperity. Every other art and pursuit seemed eager to merge itself into commerce. Capital poured into this channel. The principles of trade and all experience were set at defiance. No adventure could be too rash for success. However, gold crowned the efforts of the most ignorant operators. What wonder that we became a nation of merchants, or that in population the United States rose at once to the character of the first commercial nation in the world.† "Fixed and permanent improvements were established throughout the United States," says Mr. Seybert; "the accumulated capital of our merchants enabled them to explore new sources of wealth; our cities were augmented and embellished; our agriculture was improved, our population was increased, and our debt diminished."

To exhibit in the most striking terms the state of things, we remark from the tables, that the total imports into the United States, from 1800 to 1803, eight years, exceeded eight hundred millions of dollars; whereas in the eight years ending with 1845, these imports did not reach nine hundred millions, though the population had augmented nearly three-fold. The export of domestic produce in the first period is fully one-half that of the second. The total exports were as seven hundred millions then to nine hundred millions now; and what is the most remarkable of all, the United States, in the first eight years of the present century, conducted an export trade in foreign goods three and a half times greater than they do at this moment. In the single year of 1805 the trade was as large as in the six years ending with 1847 taken together.

The prosperity in the infant Hercules of America awoke the keenest jealousy of European powers, and open hostilities. They began to impose annoying restrictions and interdictions, and other arbitrary acts, against which all protestation proved in vain. It seemed, in despite of our most determined efforts, we must be involved in the conflicts of Europe. The spirit of the nation was aroused, and in despite of the opposition of the merchant classes an embargo was imposed in 1807, which was continued for two years. This had the effect of prostrating our commerce, and was adopted as the sole remaining alternative of peace. The embargo, said our government, by teaching foreign nations the value of American commerce and productions, will inspire them with a disposition to practise justice. They depend upon this country for articles of first necessity, and for raw materials to supply their manufactories.*

To show the extent to which we were preyed upon by the European powers, it is only necessary to consider the captures made of our merchantmen between 1803 and 1812, when we were said to be at peace with all nations. The captures were for alleged violations of various illegal orders and decrees. The list was made out by the Secretary of State, and is far from being complete, nor does it exhibit in any degree our losses, which occurred from delays, &c., as well as from actual capture.†

Captures by British.....	917 vessels.
" French.....	558 "
Neapolitans....	40 "
Danes.....	70 "

Total.....1,592 vessels.

These spoiliations were the subjects of after negotiations, viz., with England, France, 1803, Florida Treaty, 1819.

In 1809 non-intercourse with Great Britain and France was substituted for the embargo,

* We extract from Seybert.

† Seybert.

* Seybert.

† Seybert, 76.

which gave such offence to the latter that she immediately condemned millions of American property as lawful prize. The next year it was determined to remove this restriction if these powers would repeal their hostile decrees. Napoleon, after playing a game of deception, acceded in 1811. The course of Britain was unchanged, and the patience and patriotism of the American people, enduring outrage no longer, cried to arms. In the fierce and bloody conflict which followed, the national honor was forever vindicated.*

During this year, or, for example, in the years 1813 and 1814 together, our imports were less in amount than in any two years since 1790, and the export was only one-third as great in 1814 as in 1790. The country engaged, however, extensively in domestic manufactures.

From that period to this, the world has been in profound peace and engaged in the extension of arts, industry, enterprise and civilization. The great and benignant influences of such a state of things have been universally felt, and we may indeed cherish the hope that between great Christian communities the battle-axe has been ground down into the plow-share, and that nothing will soon be allowed to disturb the sacred amity and brotherhood of nations. "Peace has her victories as high," indeed infinitely higher than those of "war."

Soon after the treaty of peace, the British navigation laws were relaxed in our favor, and the orders in council of 1791 were upon this liberal basis. These gave way to the treaty of 1794, which provided for reciprocal privileges of trade. In 1815, by treaty the tonnage duties between the United States and the European possession of Britain were equalized.

For the seven years ending in 1790, the declared value of British imports from America, which is much less than the real value, averaged about four and a half millions of dollars, and the exports about eleven millions. In the seven years ending 1801, the American exports had on an average increased nearly four-fold, and American imports two and one-half fold. The American exports in 1801 were seven-fold that of 1784, and the imports only about five-fold that of 1788.†

In 1821, our imports from Britain and Ireland were twenty-five millions; in 1831, forty-four millions, and in the year ending June 30, 1847, sixty-seven millions five hundred and ninety-seven thousand six hundred and eight dollars. Our exports have in the same period increased from twenty millions to thirty-two millions, and in 1847, eighty-six millions one hundred and sixty-six thousand seven hundred and thirty-five dollars. It is true that in the last year there were peculiar causes to influence the extent of our trade

with these countries, viz., the famine there, and the low tariff of 1846.

By a comparison of the table of our trade with Britain at the beginning of the century and at the present time, we will find that in the first period it amounted to one-third of the whole American trade, and in the last period, one-half. Nothing can show more conclusively than this the importance of preserving peace and amity between the two nations. As they increase in wealth and power, the value of their mutual intercourse must go on continually augmenting.

Another striking view presents itself here. In 1790 the average value of the United States commerce to Great Britain, was one-twelfth of the aggregate value of the whole of the commerce of that empire; in 1786, one-ninth; in 1822, one-eighth; and in the year 1849, one-fourth.

With the British East Indies we opened intercourse about the year 1783, and by order of Lord Cornwallis, the governor, our vessels were admitted on favorable terms in 1788. In 1806 thirteen American vessels arrived from Canton, and as early as 1789 (Seybert) it was stated in the House of Representatives, that forty-seven vessels were on voyages to countries beyond the Cape of Good Hope. Mr. Seybert, in speaking of this commerce in 1819, says, we have made much greater progress in this trade than the several nations of Europe had before us. In 1747 the British had only eight ships, and the Dutch but six, employed in the China trade. In 1797 there were at Canton, in China, three Portuguese, five Dutch, one French, one Danish, fifteen United States, twenty-one East India Company ships, and forty belonging to British subjects residing in India. In 1785 the first importations were into the United States from China.

Our intercourse with the British East Indies was regulated by the treaty of 1794 and that of 1815. It was much greater in the beginning of the century than it has been since—the imports in 1807 were five millions, the average from 1821 to 1833 did not exceed two millions; in 1846-'47 they were one and a half millions. These imports, prior to the tariff of 1846 were, for the most part, low-priced cotton goods. They are now, some embroidered woollens, cotton baggings, cork, flaxseed, fruits, spices, camphor, saltpetre, segars, indigo, cordage, twine, hemp, silk. Our exports have been largest in specie. In other articles they have seldom exceeded the one-third or one-fourth of imports. In 1846, '47 they did not reach one hundred thousand dollars. The British East Indies include Calcutta, Madras, Bombay, etc.

With the British West Indies, the American trade has undergone great fluctuations. It has long been a subject of dispute. Mr. Pitt threw open this trade in 1783, upon the most liberal basis, for the Americans, by a bill which he introduced into Parliament, and

* The British orders were actually revoked five days before the declaration of war.

† Pitkin.

which was laid on the table. The orders in council soon after almost effectually suppressed this growing trade. The cardinal motive was the monopoly to British vessels of the carrying trade between the United States and the islands; and Lord Liverpool, in his celebrated report, in 1791, regarded it not even a subject for negotiation, that American ships in the British colonies should be treated as British ships, and congratulated his country that the orders in council had operated to the increase of British navigation compared with that of the United States, in a double ratio; but it has taken from the United States more than it has added to that of Great Britain.

In 1794, Mr. Jay negotiated a treaty with a clause favorable to our West India commerce, but it was rejected by our government on the ground that it contained another clause excluding the carriage of cotton, sugar, &c., in our ships to any part of the world. In 1802, the British proposed a mutual abolition of the discriminating and countervailing duties of the two countries, and a committee of Congress reported favorably, but from the remonstrances of the merchant classes nothing was done. In 1815, the Commercial Convention between the two powers equalized the tonnage duties with the British European powers, but left those with the American colonies in the hands of the British government. That government soon excluded the Americans entirely from the West India trade, much embarrassing our navigation interest, and rendered greatly more prosperous that of Great Britain. The President of the United States referred to the subject in his annual message. By paying a light duty or removing all duty from certain articles of United States produce when imported from British colonies, and a very heavy duty when imported direct, and by removing duties upon importations in the colonies, the British government secured every possible advantage, since foreign ships were not admitted to bring or carry produce to the colonies.

The Americans, in retaliation, first laid a duty on British vessels from the West Indies, and then excluded them in 1818. The complaint of the West Indies, which followed, produced an act of parliament in 1822, opening certain of the ports to the vessels of such countries as allowed reciprocal advantages. Congress immediately opened a direct trade but refused to remove the discriminating tonnage duty without proof that American and British vessels were received there on equal footing. To this the British refused, imposing countervailing duties at once on our vessels.

In 1825, the British opened the trade of their colonies to all foreign nations, on the condition that the British commerce and navigation should be put on a footing with the most favored nations, by those nations that had no colonies. The United States were

unwilling to grant such favor, and the ports were immediately closed against us, and our acts of exclusion were revived. In 1830, an act was passed by Congress in regard to the West India and British colonial trade, which on the interpretation given to it by the American Minister and the President, was highly favorable to British navigation. By this agreement, American vessels could carry our produce to the islands on the same terms with the British and bring back return cargoes. They were not, however, allowed to carry foreign merchandise. The English, by an act of policy, admitted in their North American colonies American produce at merely nominal duties, and suffered them to be exported thence to the West Indies by British vessels at a much lower duty than they could be received there direct from the United States. The practical effect of this was to throw the whole trade into this channel, and vastly augment the British tonnage in comparison with our own. The act, however, gave us the island trade upon perhaps the very best terms we could have expected. The English, also, had the advantage of what is called the circuitous trade, viz.: to bring a cargo to the United States; to carry one to their own colonies, and to take in at the colonies a return cargo home. This was a clear advantage over us.

Between 1795 and 1804, our exports to British West Indies varied from two to nearly ten millions, being an average of five and a half millions; the imports varied from three to seven millions, being an average of five millions. From 1821 to 1833, the tables give no very reliable data, as the ports were sometimes opened and sometimes closed, and our trade necessarily took other channels. In none of these years did the import or export much exceed two millions of dollars.

At the adoption of the Constitution, our trade with France did not exceed seven million five hundred thousand dollars annually, including her colonies. Our imports were, coffee, sugar, rice, oils, fruits, brandies, liquors, cotton, laces, silk, linen, drugs, glass, hardware, etc.; our exports, fish, breadstuff, products of forests, tobacco, negroes, etc. In 1795, this trade went up to ten million dollars, but declined again very rapidly to the close of the century. In 1807 and 1808 our exports were very large, reaching from eleven to thirteen millions, which points up to 1833, they did not again pass and only once or twice equaled. Our imports from an average of one million dollars at the opening of the century averaged in 1831 to 1833 thirteen million dollars. With regard to the French islands, Mr. Pitkin thus compares their policy with that of Britain at the close of the last century. The policy of Britain was to monopolize the carriage of the articles, that of France to monopolize the articles themselves. Britain was willing the United

States should have sugar and coffee if British ships carried them; France was willing the Americans might supply her plantations with what she could not supply them herself, but would not allow them to receive in return the valuable products of the islands which she monopolized to herself. Our trade increased notwithstanding. During the wars of Europe the ports were left entirely open, and France offered to secure their trade forever to the United States, on the condition their possession might be guaranteed to her. This was declined. Our trade became enormous, and we supplied the mother country through the islands. From 1795 to 1801, this trade averaged eighteen millions dollars, whilst from 1821 to 1833, it never exceeded two millions. In the first period, the imports were several times the exports, in the last the exports have generally been larger. The American trade with Hayti from 1821 to 1833, was larger than with all the French Islands.

The wars of the French Revolution, as we have remarked before, were most favorable to our neutral commerce. We supplied the Spanish Islands during most of the time, and our trade with them at the beginning of the century averaged twenty millions of dollars. The average from that period to 1820 was about five and a half millions exports. From 1820 we began to keep our accounts with Cuba and the South American States separately. From 1820 to 1833 our trade with Cuba averaged twelve millions annually, the imports invariably exceeding the exports largely, and was next in importance to that of England and France. The chief exports have been provisions, domestic manufacture, furniture, etc., etc. With the other Spanish Islands our trade from 1821 to 1833, varied from one to two millions. With Mexico, from 1825 to 1833, the average trade was about ten millions; imports generally the most; with Central America average about one-half million; with Colombia, two million dollars; Buenos Ayres, two million dollars; Chili, two million dollars; Peru, less than one million. To old Spain, herself, we have exported domestic produce, etc., etc., and our trade at the opening of the century averaged six millions dollars, whereas, it has since varied from one to two millions. It was largest when the peninsular wars raged.

With Portugal and dependencies, we have traded in wines, fruits, wheat, oil, staves, bedding, etc. From 1795 to 1801, our exports averaged five hundred thousand dollars, and imports near one million. From that period until 1820, except the years of war in Spain and Portugal, the average export was about one million. The imports and exports together have never since exceeded half a million. With the island of Madeira we have

conducted about an equal trade; and with Brazil, since the government was removed there, and the other colonies, the trade from 1809 to 1820 averaged about one million dollars, since which it has gone up to from five to eight millions dollars.

From Russia we have chiefly imported hemp and duck. The average imports at the beginning of the century was one million, three hundred thousand dollars, but from 1821 to 1833, the average was near two million five hundred thousand dollars; our exports have seldom been one-half million, a very small part of which has been domestic produce. In 1810 and 1811, the export was between four and five millions dollars, a large part being destined for England. We send generally cotton, tobacco, rice, oak bark, coffee, sugar, dyewoods and spices. We also import iron, cordage, drillings, diapers, tickings, etc.

Since 1823, our accounts with Norway and Sweden have been kept together. With Sweden our trade is chiefly in iron. From 1821 to 1833 the imports averaged about one million, whilst the exports have seldom exceeded one-third of that amount. From 1795 to 1801, we traded with Swedish West Indies to the amount of one million dollars annually. The trade became much more considerable afterwards, when the trade with other islands was carried on through these. Since 1821, this trade has declined at last to about one hundred thousand dollars per annum.

The account with Denmark and Norway was conjoined until 1823. This trade from one million of dollars in 1800, rose to one and a half millions in 1805-7. During our non-intercourse with Britain and France in 1809-10, and whilst Hamburg was occupied with the French, quantities of cotton, tobacco, sugar and coffee went to these quarters, destined for other countries. From 1812 to 1833, this trade averaged only three or four hundred thousand, the imports being scarcely anything. With the Danish as with the Swedish West Indies, our trade did once reach three to five millions of dollars. From 1821 to 1833, the average has been not far from four millions of dollars. The trade with the British Islands was conducted through them.

With Hamburg, Bremen, and the northern ports of Germany, we traded largely before their occupation by French troops. Hamburg has been the great depot for Germany and the North of Europe. By the Elbe and Weser, and the canals, German manufactures are brought to Hamburg. They are the cities of imports for Germany. In 1795 our trade with these cities was one and a half millions, 1797-8 and '99 it averaged eighteen millions dollars: the exports generally doubling, and often many times

exceeding the imports, and being for the most in foreign goods. Since 1821 the trade has averaged about four and a half millions dollars.

For the same causes that the Hamburg trade advanced, that with the Netherlands did also. The continental system was never thoroughly enforced there, even under Louis Bonaparte. The average trade from 1795 to 1801 was, exports, five millions; imports, one and a half millions. From 1804 to 1807 the exports averaged near fifteen millions dollars a year, chiefly foreign produce. From 1821 to 1833 the whole trade has varied from three to four millions a year, the exports being double the imports. In 1833 the trade with Belgium was kept separate, and was one million dollars. Our exports are tobacco, rice, cotton, &c., sugar and coffee; imports, woollen, linen, spirits, and various manufactures. With the Dutch West Indies we have prosecuted considerable trade; to the extent, one time, of five to eight millions; from 1821 to 1833 it has seldom exceeded one to one and a half millions. With the Dutch East Indies we conducted the carrying trade from 1795 to 1801. In the last year the exports reached four millions dollars, being coffee, spices, &c. The trade has seldom exceeded one and a half millions since.

We have exported to Italy, fish, sugar, coffee, pepper, &c., and imported wines, silks, brandies, fruits, bonnets, oil, paper, rags. The trade has never exceeded three millions dollars a year, and has most generally been from one to two millions; the imports being in large excess.

Our trade with China opened in 1784. In 1785 Captain Dean, in a little sloop of eighty tons and seven men, made a successful voyage to Canton. In 1789 we had more vessels at Canton than any other nation, except Britain. The imports are teas, silks, nankeens, China-ware; with the former we supplied Europe during the wars. We have consumed, 1789 to 1800, two and a half million pounds of tea, annually; from 1801 to 1812, three millions three hundred and fifty thousand pounds; from 1821 to 1833, seven millions. The Americans also prosecute trade between China and other parts of the world.

Our direct trade with Canton from 1821 to 1833, has varied from one to five million exports, and three to seven million imports. The exports are furs, ginseng, cottons, raw cotton, &c.; specie, quicksilver, opium, cloths. The specie export has sometimes reached five million, the average from 1828 to 1833 was four million dollars. We formerly conducted a large fur trade from the north-west to China in addition. Our hardy mariners and traders were found in the most perilous seas. The inhabitants of Stonington, Connecticut, says Mr. Pitkin, in their little barks of fifty to eighty tons, pursued the sealing

business, finding a market now at home. The amount of furs carried into China by the Americans, from 1800 to 1803, was one million six hundred thousand dollars. From 1815 to 1817 the average was three hundred thousand dollars a year. In 1819 the Americans began to carry English goods from England to China, to the amount of near one million dollars a year. The whole value of trade with Canton, on American account, from 1804 to 1833, was, in periods of ten years:—1st period, average imports, three million dollars—exports, three million dollars; 2d period, imports, six and a half million dollars—exports, six million dollars; 3d period, imports, five million eight hundred thousand dollars—exports, six million dollars. In 1833 the exports and imports were eight million dollars each. Our exports to Canton are specie, bills on England, and merchandise—the latter being in general one-third or one-quarter, but sometimes one-half of the whole export.

In regard to navigation, which is so important in its connection with commerce, we may remark, that the two are not necessarily co-existent in the same degree in every country. The one applies to all the various transfers of commodities from hand to hand, and the other to their transportation from place to place by water. This transportation may be between different portions of the same country, or between one country and another, and receives accordingly the designations of coastwise and foreign. The former will, in most countries, be the greater in amount, though not always. Both may be in the hands of foreigners, to a very considerable extent, and usually are. The shipping of one nation may conduct the trade of another. Some nations are more especially maritime than others, and from peculiar advantages are enabled to build and man shipping at a much lower expense; and as ship-room, or freight, is governed by the rules of all other commodities, it can, of course, be afforded less where it costs less. There is no patriotism in any country which will employ its own shipping in preference to foreign at a higher cost. The cheapest vessel will get the freight.

As the possession of shipping is a great source of national pride, independent of the substantial advantages in supporting the naval or war power, and an immense source of profit and wealth, in the same manner with commerce or manufactures, it is not surprising that most countries have endeavored, in every way, to build up this interest among themselves, and, as far as possible, limit it among others. The utmost jealousies have been, and are still evinced. Legislation has exhausted its thousand expedients in navigation systems, countervailings, retaliations, bounties, *et omne genus*. Treaties

upon treaties have been made and broken. Every other trade in the world has flourished but free trade. The weaker nations regard this as fatal to them, and the stronger are timid in its adoption.

As early as 1670 the increase of shipping in New-England was complained of by Sir Josiah Child, an English writer. The whole amount of tonnage employed in the colonial trade in 1770 is estimated at three hundred thousand tons. A report of the lords' privy council shows that the proportion owned by British merchants to that owned by the colonial, was as thirty-four to fifteen, in all the colonies. Seven-eighths of the southern shipping was British. At that period we were in the habit of selling colony-built ships in Great Britain, as a source of profit. In 1772 the colonies built one hundred and eighty-two vessels—twenty-six thousand five hundred and forty-four tons. Of these, New-England built one hundred and twenty-three, Maryland, Virginia and the Carolinas and Georgia, twenty-five.

After the peace, and before the adoption of the constitution, our shipping regulations were conflicting, and without regular system. Most of the states imposed duties upon foreign vessels, but New-York, being most liberal, laid the foundation of her immense foreign commerce. No better proof can be alleged of the illiberality of all restrictions, and their positive injury.

Congress, however, in 1789, took the matter in hand, imposed heavy discriminating duties against foreign tonnage, prohibited the coasting trade to foreigners, and by such duties on tea, secured the China trade to our own citizens. The act of 1790 imposed a duty of from thirty to fifty cents a ton on foreign vessels, that on American being but six cents, and also ten per cent. higher duty upon merchandise imported in such vessels. On a vessel of six hundred tons, including the light-house duty of fifty cents the ton, the duties would be five hundred to six hundred dollars, and about as much more, on the lowest estimate, on her freight. Here then we have a protection to the American vessel of twelve hundred dollars, equivalent to thirty to fifty per cent. on the value of cargo freight.

In 1789, the tonnage of New-York, Massachusetts, Pennsylvania, Maryland, Virginia, South Carolina and Georgia, was estimated at four hundred and thirty-seven thousand dollars, of which two hundred and eighty thousand was American, being three-fifths. For all the colonies in 1791, the foreign vessels employed in the foreign trade, was 41.4 to the 100, compared with the American vessels—The French was but one-thirtieth, Spanish one-forty-eighth, Netherlands one-fifty-seventh.

Under this navigation law, foreign ship-

ping began gradually to decline in our ports, whilst the American rapidly advanced. By 1811 the foreign was but three-quarters to the hundred, owing, however, in a considerable degree, to European wars, &c. Indeed, our tonnage was already but a third less than that of all Europe in 1676, according to Sir William Petty. "In twenty years," says Mr. Seybert, "we raised our tonnage so as to be equal to that of Great Britain one hundred years after they had passed the navigation act." The lords' privy council, in England, referred to this rapid decline in their navigation with the United States, which they exhibited by statistical results. They proposed reciprocity treaties, but not to extend to their colonies. To this trade they could not think of admitting foreigners on equal terms. By the acts of 1797 and 1802, they imposed heavy countervailing and tonnage duties upon our vessels. The king, however, was soon after authorized to remit the duties if it could be done reciprocally. A committee of Congress admitted the British had secured by their duties the carrying of our tobacco, cotton, rice, indigo, &c.; but their proposed compromise was met by the protests of the merchants, and laid on the table. In 1812, an additional duty of one dollar and fifty cents per ton on foreign ships was laid on, it was said, for revenue, though it produced but eight thousand dollars more than the lower duties. A convention between the two countries, in 1815, equalized the duties where the vessels were freighted with the produce of their own countries. We have seen how this resulted, and the other restriction acts of our own government, in 1817. In 1818, it was stated in Congress, that the Americans transported but two millions one hundred and seventy-seven thousand nine hundred and twenty-four dollars of the trade with the West Indies and British North American colonies, whilst the English carried eleven million three hundred and twenty-two thousand and seventy-six dollars of the most bulky articles, one-half being of our own production.

Mr. Seybert, whilst he maintains we have gained so much by our navigation laws, admits that our position, as a neutral nation, during the wars of Europe, did very much. But he says, independent of these wars, viz.: before the breaking out of the English and French war, in 1793, our tonnage had greatly increased. It would be easy to account for this from natural causes.

It appears that at the close of the last century, little over one-quarter of the tonnage engaged in the trade of France was French; and during the wars British ship-building greatly declined, which was the case with ours on the return of peace.

In 1810, the shipping of the United States was one ton to every 5.8 inhabitants, and its

whole value, at fifty dollars a ton, seventy-one millions two hundred and thirty-nine thousand one hundred and fifty dollars. In England, in 1813, the registered tonnage was one to 6.69 inhabitants.*

Vessels of five hundred tons have been built in the West. Before the Revolution, we annually built about twenty thousand tons; the average from 1803 to 1816, was over one hundred and two thousand tons. During the greater part of the same period, the average in Britain was but one hundred thousand, but this was during the European wars.

In regard to the number of seamen, it appears that the English varied, at the end of the last century, from one man to thirteen to one man to twenty tons; the average being one to fifteen. The Americans employ one man to seventeen tons, except the fisheries, which is one to twelve and a-half tons.

Mr. Pitkin states the whole British tonnage, in 1829, on authentic returns, nineteen thousand one hundred and ten vessels, tonnage two million one hundred and ninety-nine thousand nine hundred and fifty-nine. These were registered, and included all but the smaller vessels. Mr. Marshall, a British

writer, in 1833, states the whole number of British vessels in foreign commerce about six thousand seven hundred and fifty, or one million one hundred thousand tons. The whole British registered tonnage, in 1829, only exceeded that of the United States, in 1832, three hundred and twenty-eight thousand six hundred and fifteen tons. On the authority of Mr. Marshall's statement, in regard to the number of trips made by each vessel. Mr. Pitkin estimates British coasting trade, in 1832, including Ireland, eight hundred and twenty-eight thousand tons. In 1830, it was stated in Congress, that British shipping had increased, from 1814 to 1828, fifty per cent., whilst other nations trading with her, but three per cent. Mr. Marshall, however, asserts a diminution in British shipping in the same time.

A committee of Congress, in 1830, doubted that the foreign wars gave a first impulse to our navigation. This impulse, say they, was from the rich and increasing agricultural resources, the removal of all the counter-vailing laws of the states, our commercial enterprise, and a foreign commerce without restrictions.†

UNITED STATES COMMERCE.

STATEMENT OF COMMERCE, REVENUE, AND POPULATION OF THE UNITED STATES, FROM 1790 TO 1821.

Years	Imports*		Exports		Total Exports
	Total imports	Consumption in U. S.	Domestic Produce	Foreign Merch.	
1790.....	\$23,000,000	\$22,460,844	\$19,666,000	\$539,156	\$20,205,156
1791.....	29,200,000	28,687,958	18,500,000	512,041	19,012,041
1792.....	31,500,000	29,745,902	19,000,000	1,753,099	20,735,098
1793.....	31,100,000	28,990,428	24,000,000	2,109,572	26,109,572
1794.....	34,600,000	28,073,767	26,500,000	6,526,233	33,026,233
1795.....	69,756,000	61,266,796	39,500,000	8,489,472	47,989,472
1796.....	81,436,164	55,136,164	40,764,097	26,300,000	67,064,097
1797.....	75,379,406	48,379,406	29,850,206	27,000,000	56,850,206
1798.....	68,551,700	35,551,700	28,527,097	33,000,000	61,527,097
1799.....	79,069,184	33,546,148	33,142,522	45,523,000	78,665,522
1800.....	91,252,768	52,121,891	31,840,903	39,130,877	70,971,780
1801.....	111,363,511	64,720,790	47,473,204	46,642,721	94,115,925
1802.....	76,333,333	40,558,362	36,708,189	35,774,971	72,483,160
1803.....	64,666,666	51,072,594	42,205,961	13,594,072	55,800,033
1804.....	85,000,000	48,768,403	41,467,477	36,231,597	77,699,074
1805.....	120,600,000	67,420,981	42,387,002	53,179,019	95,566,021
1806.....	129,410,000	69,126,764	41,253,727	60,283,236	101,536,963
1807.....	138,500,000	78,856,442	48,699,592	59,643,558	108,343,150
1817.....	99,250,000	79,891,931	68,313,500	19,358,069	87,671,563
1818.....	121,750,000	102,323,304	73,854,437	19,426,696	93,281,139
1819.....	87,125,000	67,959,317	50,976,838	19,165,683	70,142,521
1820.....	74,450,000	56,441,971	51,683,640	18,008,029	69,691,669

* Exclusive of specie.

UNITED STATES COMMERCE, 1821-1849.

Year	Domestic exports	Foreign exports	Total exports	Total imports
1821.....	\$43,671,894	\$21,302,488	\$64,974,382	\$62,585,724
1822.....	49,784,079	22,286,202	72,160,281	82,241,541
1823.....	47,155,408	27,543,722	74,699,030	77,579,267
1824.....	50,649,500	25,337,157	75,986,657	80,549,007
	191,350,881	96,469,469	287,820,350	303,955,539

* By calculation made in 1808, it appears one ton is required for the carriage of every forty-one or fifty-one dollars exports American products.—SEYBERT.

† The reader has perceived the present article is only brought down to 1833; we intend its completion to date in future volumes.

UNITED STATES COMMERCE, 1821-1849—continued.

	Domestic exports	Foreign exports	Total exports	Total imports
1825	\$66,944,745	\$32,590,643	\$99,535,388	\$96,340,075
1826	53,055,710	24,539,612	77,595,322	84,974,477
1827	58,921,691	23,403,136	82,324,827	79,481,068
1828	50,669,669	21,595,017	72,264,686	88,509,824
	229,591,815	102,128,408	331,720,223	349,305,444
1829	55,700,139	16,658,478	72,358,671	74,492,527
1830	59,462,029	14,387,479	73,849,508	70,876,920
1831	61,277,057	20,033,526	81,310,583	103,191,124
1832	63,137,470	24,039,473	87,176,943	101,029,266
	239,576,749	75,118,956	314,695,705	349,589,837
1833	70,317,698	19,822,735	90,140,433	108,118,311
1834	81,024,162	23,312,811	104,336,973	126,521,332
1835	101,183,082	20,504,495	121,693,577	149,895,742
1836	106,916,680	21,746,360	128,663,040	189,980,305
1837	95,564,414	21,845,962	117,419,376	140,980,177
1838	96,033,821	12,452,795	108,486,616	113,717,404
1839	103,533,891	17,494,525	121,028,416	102,092,132
	654,579,748	137,188,683	791,768,431	991,305,133
1840	113,895,634	18,190,312	132,085,946	107,141,519
1841	106,383,722	15,469,081	121,851,803	127,946,177
1842	92,969,996	11,721,538	104,691,534	100,162,087
	313,248,352	45,380,931	358,629,283	335,249,723
1843	77,793,783	6,552,697	84,346,480	64,753,799
1844	100,183,497	10,944,781	111,128,278	108,434,702
1845	99,299,776	15,346,830	114,646,606	117,254,564
1846	102,141,893	11,346,623	113,488,516	121,691,797
	379,418,949	44,190,931	423,629,880	412,134,862
1847	150,637,464	8,051,561	158,689,025	146,545,636
1848	132,904,121	21,128,010	154,032,131	154,998,928
1849	132,666,955	13,088,865	145,755,820	147,857,439
	416,208,540	42,268,436	458,476,976	449,402,005

RECAPITULATION BY PERIODS.

1821-24	191,350,881	96,469,469	287,820,350	303,955,539
1825-28	229,591,815	102,128,408	331,720,223	349,305,444
1829-32	239,576,749	75,118,956	314,695,705	349,589,837
1833-39	654,579,748	137,188,683	791,768,431	991,305,133
1840-42	313,248,352	45,380,931	358,629,283	335,249,723
1843-46	379,418,949	44,190,931	423,629,880	412,134,862
1847-49	416,208,540	42,268,436	458,476,976	449,402,005

Total domestic exports in 29 years	\$2,423,974,034
“ foreign	542,745,814

Total exports, domestic and foreign	\$2,966,720,848
“ imports	3,190,942,603

Excess of imports in 29 years	\$224,221,755
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Which is about eight per cent. on the total value of exports during the same period. And this excess all occurred prior to the year 1840, as appears from what follows :

	Excess of imports	Excess of exports
1st period—tariff of 1816	\$16,135,169	—
2d “ “ 1824	17,565,221	—
3d “ “ 1828	34,891,132	—
4th “ “ 1832	199,536,702	—
5th “ “ compromise reduction of tariff of 1832	—	\$23,397,500
6th “ “ tariff of 1842	—	11,475,018
7th “ “ 1846	—	9,074,971
Totals	\$268,151,244	\$43,929,489

UNITED STATES COMMERCE—1850.

EXPORTS AND IMPORTS OF THE STATES, YEAR ENDING JUNE 30, 1850.

	Total Domestic Exports	Total For. Exports.	Total Amer. and Foreign Prod. Export'd	In Amer. vessels. Imports	In Foreign vessels. Imports	Total Imports
Maine.....	\$1,536,818	29,094	1,556,912	609,155	247,256	856,411
New-Hampshire..	8,722	205	8,927	19,962	29,117	49,079
Vermont.....	404,749	26,157	430,906	463,092		463,092
Massachusetts..	8,253,473	2,428,290	10,681,763	22,106,011	8,268,673	30,374,684
Rhode Island..	206,299	9,966	216,265	251,708	6,595	258,303
Connecticut....	241,262	668	241,930	311,927	60,463	372,390
New-York.....	41,502,800	11,209,989	52,712,789	88,147,721	22,975,803	111,123,524
New-Jersey.....	1,655		1,655		1,494	1,494
Pennsylvania..	4,049,464	452,142	4,501,606	10,795,462	1,270,692	12,066,154
Delaware.....						
Maryland.....	6,589,481	377,672	6,967,353	5,529,682	594,519	6,124,201
Dist. of Columbia.	80,388	200	80,588	59,219	600	59,819
Virginia.....	3,413,158	2,488	3,415,646	172,878	253,721	426,599
North Carolina..	416,501		416,501	179,249	144,443	323,692
South Carolina..	11,446,892	908	11,447,800	1,313,658	620,127	1,933,785
Georgia.....	7,551,943		7,551,943	306,883	330,081	636,964
Florida.....	2,607,968	15,656	2,623,624	30,241	65,468	95,709
Alabama.....	10,544,858		10,544,858	108,134	757,228	865,362
Louisiana.....	37,698,277	407,073	38,105,350	8,107,929	2,652,570	10,760,499
Mississippi.....						
Tennessee.....				27,966		27,966
Missouri.....				359,643		359,643
Ohio.....	217,532	100	217,632	398,999	183,505	582,504
Kentucky.....				190,987		190,987
Michigan.....	132,045		132,045	144,102		144,102
Illinois.....	17,669		17,669	7,783	7,922	15,705
Texas.....	24,958		24,958	14,652	10,998	25,650
California.....						
Oregon.....						
Total.....	\$136,946,912	\$14,951,808	\$151,898,720	\$139,657,043	\$38,481,275	\$178,138,318

EXPORTS AND IMPORTS U. S., YEAR ENDING JUNE 30TH, 1850.

Countries	Exports, domestic	Exports, foreign	Total exports	Imports
Russia.....	\$666,435	\$198,506	\$864,941	\$1,511,572
Prussia.....	70,645	27,991	98,636	27,469
Sweden and Norway	668,580	51,610	720,190	1,032,117
Swedish West Indies	98,176	11,166	99,342	2,193
Denmark.....	165,874	20,706	186,580	557
Danish West Indies	867,140	114,818	981,958	267,459
Hanse Towns..	4,320,780	885,742	5,206,522	8,787,874
Hanover.....				
Holland.....	2,188,101	410,564	2,604,665	1,686,967
Dutch East Indies	180,533	262,952	443,485	444,404
Dutch West Indies	364,335	56,683	421,018	530,146
Dutch Guiana..	97,014	5,425	102,439	71,043
Belgium.....	2,168,357	375,403	2,543,760	2,404,954
England.....	64,686,959	4,210,271	68,897,230	72,118,971
Scotland.....	3,021,740	183,679	3,205,419	2,748,670
Ireland.....	1,025,031	42,693	1,067,724	293,783
Gibraltar.....	186,307	60,482	246,789	44,269
Malta.....	75,329	39,051	114,380	11,354
British East Indies	502,613	156,546	659,459	2,865,016
Cape of Good Hope	143,219		143,219	72,206
Mauritius.....				
Honduras.....	171,984	16,551	188,535	178,690
British Guiana	502,776	22,663	525,439	14,591
British West Indies	3,612,802	178,644	3,791,446	1,126,968
Canada.....	4,641,451	1,289,370	5,930,821	4,285,470
Newfoundland				
Falkland Islands				
British American Colonies	3,116,840	501,374	3,618,214	1,358,992
Other British Possessions				497
France, on the Atlantic	16,934,791	1,724,915	18,659,706	25,835,170
France, on the Mediterranean	1,015,486	158,155	1,173,641	1,702,855
French West Indies	269,377	18,291	287,668	75,684
Miquelon and French Fish- eries.....	2,517		2,517	
French Guiana..	43,405	1,362	44,767	12,551
Bourbon.....	12,575	2,200	14,775	10,005
French possessions in Africa..				
Spain, on the Atlantic	605,659	28,558	634,217	380,181
Spain on the Mediterranean	3,256,362	96,855	3,353,217	1,702,214
Teneriffe and other Canaries	20,524	5,065	25,589	85,223
Manilla and Philippine Islands	16,817	1,450	18,267	1,336,866
Cuba.....	4,530,256	460,041	4,990,297	10,292,398

EXPORTS AND IMPORTS U. S., YEAR ENDING JUNE 30TH, 1850—*continued.*

Countries	Exports, domestic	Exports, foreign	Total exports	Imports
Other Spanish West Indies	\$816,062	\$93,591	\$909,653	\$2,067,866
Portugal	172,978	5,236	178,214	339,763
Madeira	136,874	6,527	143,401	114,729
Fayal and other Azores	14,421	2,152	16,573	16,328
Cape de Verdes	47,043	2,167	49,210	.....
Italy	1,567,166	239,904	1,807,070	2,105,077
Sicily	50,577	13,024	63,601	822,629
Sardinia	170,764	86,136	256,900	205
Tuscany	45,664	23,468	69,132	.....
Ionian Islands	.....	.....	.....	.....
Trieste, and other Austrian Ports	1,179,893	312,111	1,492,004	467,601
Turkey	204,397	53,344	257,741	801,023
Hayti	1,211,007	139,181	1,350,188	1,544,771
Mexico	1,498,791	514,036	2,012,827	2,135,366
Central America	57,225	12,967	70,192	261,459
New-Granada	970,619	285,600	1,256,219	591,992
Venezuela	678,462	340,008	1,018,470	1,920,247
Bolivia	.....	.....	.....	.....
Brazil	2,723,767	473,347	3,197,114	9,324,429
Argentine Republic	718,331	346,311	1,064,642	2,653,877
Cisplatine Republic	60,024	1,518	61,542	.....
Chili	1,297,133	125,588	1,422,721	1,796,877
Peru	258,939	16,789	275,728	170,753
China	1,485,961	119,256	1,605,217	6,593,462
Liberia	.....	.....	.....	.....
West Indies, generally	67,934	.....	67,934	9,417
South America, generally	22,256	50,442	72,698	86,659
Europe, generally	.....	.....	.....	.....
Asia, generally	315,463	13,321	328,784	402,599
Africa, generally	730,932	28,334	759,266	524,722
South Sea Islands	169,025	20,837	189,862	.....
Equador	24,414	10,511	34,925	4,618
Pacific Ocean	.....	.....	.....	.....
Atlantic Ocean	.....	.....	.....	26
Indian Ocean	.....	.....	.....	.....
Sandwich Islands	.....	.....	.....	64,474
Australia	.....	.....	.....	.....
Patagonia	.....	.....	.....	.....
Uncertain places	.....	.....	.....	.....
North-West Coast	.....	.....	.....	.....
Total	\$136,946,912	\$14,951,808	\$151,898,720	\$178,138,318

UNITED STATES COMMERCE—EXPORTS AND IMPORTS, 1850–51.

From the tables of the Report of the Secretary of the Treasury, we take the following as of immediate interest:

SYNOPSIS OF IMPORTS AND EXPORTS FOR THE FISCAL YEAR, ENDING 30TH JUNE, 1851.

Foreign merchandise imported in American vessels	\$160,115,714
In foreign vessels	50,642,380
	\$210,758,094
Specie imported in American vessels	3,320,585
In foreign vessels	1,647,316
	4,967,901
Total	215,725,995
Foreign merchandise imported as above	210,758,094
Less exported, viz.—	
In American vessels	7,708,801
In foreign	2,029,894
	9,738,695
Foreign merchandise consumed	201,019,399
Specie imported from foreign ports	4,967,301
“ exported to “ in American coin	18,069,580
In foreign coin	11,162,300
	29,281,880

EXPORTS, VIZ.:

American produce in American vessels	127,054,544
In foreign vessels	51,492,011
	178,546,555
Foreign goods re-exported	9,738,695
Total export of merchandise	188,285,250

RECAPITULATION.

Total import of merchandise	\$210,758,094
“ exports “	188,285,250
Excess of imports	\$22,472,844
Total exports of specie to foreign ports	29,231,780
“ imports “ from	4,967,901
Excess of exports	24,263,979

The above does not include the gold from California.

From the statement of the quantity and quality of certain articles imported in 1845 and 1851, we take the following :

Iron	1845.		1851.	
	Cwt	Value	Cwt	Value
Bar manufactured by rolling	1,023,772	\$1,691,748	5,108,555	\$7,267,350
“ otherwise	363,580	872,157	403,973	900,026
Pig	550,209	506,291	1,308,732	587,599
Old and scrap	116,950	119,740	166,838	111,755

Total exports of cotton for 1851—927,237,089 lbs. Value, \$112,315,317. Estimating 450 lbs. to the bale, gives 2,060,527 bales.

VALUE OF BREADSTUFFS AND PROVISIONS EXPORTED.

In 1850	\$26,051,373
1851	21,421,216
Decrease in 1851	\$4,630,157

IMPORTS, EXPORTS AND TONNAGE, FOR TEN YEARS.

	Imports	Exports	Tonnage
1842	100,162,087	104,691,534	2,092,391
1843 nine months, ending June 30	64,753,799	34,346,480	2,158,603
1844	108,435,035	111,200,046	2,280,095
1845	117,254,564	114,646,606	2,417,042
1846	121,691,797	113,388,516	2,562,085
1847	146,545,638	158,643,622	2,839,046
1848	154,998,928	154,032,181	3,154,042
1849	147,857,439	145,755,820	3,334,015
1850	178,136,318	151,898,720	3,585,454
1851	223,405,272	217,523,201	3,772,430

UNITED STATES COMMERCE—SPECIE, BULLION, ETC.

Statement exhibiting the amount of Coin and Bullion imported and exported annually from 1821 to 1850, inclusive; and also the amount of importation over exportation, and of exportation over importation, during the same years.

Year ending	Imported	Exported	Excess of Importation over exportation	Excess of Exportation over Importation
September 30, 1821	\$8,064,890	\$10,475,059	—	\$2,413,169
“ “ 1822	3,369,846	10,810,180	—	7,440,334
“ “ 1823	5,097,896	6,372,987	—	1,275,091
“ “ 1824	6,379,835	7,014,552	1,365,253	—
“ “ 1825	6,150,765	8,797,755	—	2,646,290
“ “ 1826	6,880,966	4,704,533	2,176,433	—
“ “ 1827	8,151,130	8,014,880	136,250	—
“ “ 1828	7,489,741	8,243,476	—	753,735
“ “ 1829	7,403,612	4,924,020	2,479,592	—
“ “ 1830	8,155,964	2,178,773	5,977,191	—
“ “ 1831	7,305,945	9,014,931	—	1,708,986
“ “ 1832	5,907,504	5,656,340	254,164	—
“ “ 1833	7,070,368	2,611,701	4,458,667	—
“ “ 1834	17,911,632	2,076,758	15,831,874	—
“ “ 1835	13,131,447	6,477,775	6,653,672	—
“ “ 1836	13,400,881	4,324,336	9,076,545	—
“ “ 1837	10,516,414	5,976,249	4,540,165	—
“ “ 1838	17,746,116	3,508,046	14,239,070	—
“ “ 1839	5,595,176	8,776,743	—	3,181,567
“ “ 1840	8,882,813	8,417,014	465,799	—
“ “ 1841	4,988,633	10,034,332	—	5,045,699
“ “ 1842	4,087,016	4,813,539	—	726,523
“ “ 1843	22,380,335	1,520,791	20,799,544	—
“ “ 1844	5,830,429	5,454,214	376,215	—
“ “ 1845	4,070,242	8,606,495	—	4,536,253
“ “ 1846	3,777,732	3,905,268	—	127,536
“ “ 1847	21,121,289	1,907,739	22,213,550	—
“ “ 1848	6,360,294	15,841,620	—	9,481,396
“ “ 1849	6,651,240	5,404,648	1,246,592	—
“ “ 1850	4,628,792	7,522,994	—	2,894,202

Total

TREASURY DEPARTMENT.

TOWNSEND HAINES, Register.

Statement exhibiting the quantity and value of Cotton, Tobacco, and Rice, exported annually, from 1840 to 1850, inclusive.

	Cotton			Tobacco		Rice	
	Sea Island, lbs.	Other, lbs.	Value	Hhds.	Value	Tierces	Value
1840.....	8,779,660	785,161,392	\$63,870,307	119,484	\$ 9,883,957	101,660	\$1,942,076
1841.....	6,237,424	523,966,676	54,330,341	147,828	12,576,703	101,617	2,010,107
1842.....	7,254,090	577,462,918	47,590,464	158,710	9,540,755	114,617	1,907,387
1843.....	7,515,079	784,782,027	40,119,806	94,154	4,650,979	106,766	1,625,726
1844.....	6,099,076	657,534,379	54,063,501	163,042	8,397,255	134,715	2,182,468
1845.....	9,389,625	863,516,371	51,730,643	147,168	7,460,849	118,621	2,160,456
1846.....	9,388,533	538,160,522	42,797,344	147,998	8,478,270	121,007	2,564,991
1847.....	6,293,973	520,925,985	53,445,848	135,762	7,242,086	144,427	3,605,896
1848.....	7,724,148	806,550,283	61,998,294	130,665	7,551,122	100,403	2,331,824
1849.....	11,969,259	1,014,633,010	66,396,967	101,521	5,804,207	128,861	2,569,362
1850.....	8,236,463	627,145,141	71,984,616	145,729	9,954,023	127,069	2,631,557

UNITED STATES POPULATION, DEBT, LOANS, ETC.

From a circular for the European Correspondence of CAMMANN & WHITEHOUSE, we are permitted to copy the annexed interesting tables, compiled at their request by the Treasury Department, in order that official information might be given to foreigners desirous of investing in American Stocks—of the extent of our population, resources and debt.

There is not another country under the sun that can exhibit such resources and so small a debt :

Statement, exhibiting the population of the United States, the Public Debt, the receipts from Loans and Treasury Notes, the receipts, exclusive of Treasury Notes and Loans, and the payments on account of the debt each year, from 1791, to June, 1848, inclusive.

each year, from 1791, to June, 1848, inclusive.			Receipts from Loans and Treas. Notes	Revenue exclusive of Loans and Treas. Notes	Principal and interest of debt paid
Year	Population	Debt			
Census of 1791	4,067,371	\$75,463,476 52	\$5,791,112 56	\$4,418,913 19	\$5,287,949 50
2	4,205,404	77,227,924 66	5,070,806 46	3,669,960 21	7,263,665 99
3	4,343,457	80,352,684 04	1,067,701 14	4,652,923 14	5,819,505 29
4	5,481,500	78,427,404 77	4,609,196 78	5,431,904 87	5,801,578 09
5	6,419,543	80,747,587 39	3,305,268 20	6,114,834 59	6,084,411 61
6	4,757,586	83,762,172 07	362,800 00	8,377,549 65	5,835,846 44
7	4,895,629	82,064,479 33	70,135 41	8,688,780 98	5,792,421 82
8	5,033,672	79,228,529 12	308,574 27	7,900,495 80	3,990,294 14
9	5,171,715	78,408,669 77	5,074,646 53	7,546,813 31	4,596,876 78
Census of 1800	5,309,758	82,976,294 35	1,602,435 04	10,848,749 10	4,578,369 95
1	5,502,772	83,038,050 80	10,125 00	12,935,330 95	7,291,707 04
2	5,695,787	80,712,632 25	5,597 36	14,994,793 95	539,004 76
3	5,888,801	77,054,686 30		11,064,097 63	7,256,159 43
4	6,081,816	86,427,120 88	9,532 64	11,826,307 38	8,171,787 45
5	6,274,830	82,312,150 50	128,814 94	13,560,693 20	7,369,889 79
6	6,467,845	75,723,270 66	48,897 71	15,559,931 07	8,989,884 61
7	6,660,859	69,218,398 64		16,398,019 26	6,307,720 10
8	6,853,874	65,196,317 97	1,882 16	17,060,661 93	10,260,245 35
9	7,046,888	57,023,192 09		7,773,473 12	6,452,554 16
Census of 1810	7,239,908	53,173,217 52	2,759,992 25	9,384,214 28	8,008,904 46
11	7,479,729	48,005,587 76	8,309 05	14,423,529 00	8,009,204 05
12	7,719,555	45,209,737 90	12,837,900 00	9,801,133 76	4,449,622 45
13	7,959,381	55,962,827 57	26,184,435 00	14,340,409 95	11,108,123 44
14	8,199,208	81,487,846 24	23,377,911 79	11,181,625 16	7,900,543 94
15	8,439,034	99,833,660 15	35,261,320 78	15,696,916 82	12,628,924 35
16	8,678,860	127,334,933 74	9,494,436 16	47,676,985 66	24,871,082 93
17	8,918,687	123,491,965 16	734,542 59	33,099,049 74	25,423,036 12
18	9,158,513	103,466,633 83	8,765 62	21,585,171 04	21,296,201 62
19	9,398,339	95,529,648 28	2,291 00	24,603,374 37	7,703,926 29
Census of 1820	9,638,166	91,015,566 15	3,040,824 13	17,840,669 55	8,628,494 28
1	9,959,965	89,987,437 66	5,000,324 00	14,573,379 72	8,367,093 62
2	10,281,765	93,546,676 98		20,232,427 94	7,848,949 12
3	10,603,565	90,875,877 28		20,540,666 26	5,530,016 41
4	10,925,365	90,239,777 77	5,000,000 00	19,381,212 79	16,538,303 76
5	11,247,165	83,788,432 71	5,000,000 00	21,840,858 02	12,995,344 78
6	11,568,965	81,054,059 99		25,260,434 31	11,041,032 19
7	11,890,765	73,987,357 20		22,966,363 96	10,003,668 35
8	12,212,565	67,475,043 87		24,763,629 23	12,163,438 07
9	12,534,365	58,421,413 67		24,827,627 38	12,383,867 78
Census of 1830	12,856,165	48,565,406 50		24,844,116 51	11,355,748 22
1	13,277,415	39,123,191 66		28,526,820 82	16,174,378 22
2	13,698,665	24,322,235 18		31,665,561 16	17,840,309 99
3	14,119,915	7,001,032 88		33,948,426 25	1,543,543 38
4	14,541,165	4,760,082 08		21,791,935 55	6,176,565 19
5	14,962,415	351,289 05		85,430,187 10	58,191 28
6	15,383,665	291,089 05		50,826,796 08	
7	15,804,915	1,878,223 55	2,992,989 15	24,890,864 69	21,822 01
8	16,226,165	4,857,660 46	12,716,820 86	26,303,561 74	5,605,720 27
9	16,647,415	11,983,737 53	3,857,276 21	30,023,966 68	11,117,987 42
Census of 1840	17,068,665	5,125,077 63	5,589,547 51	19,442,646 08	4,066,613 70
1	17,560,082	6,737,398 00	13,659,317 39	16,850,180 27	5,600,689 74
2	18,051,499	15,028,486 37	14,808,735 64	19,965,009 25	8,575,539 94

UNITED STATES POPULATION, DEBT, LOANS, ETC.—continued.

Year	Population	Debt	Receipts from Loans and Treas. Notes	Revenues exclu- sive of Loans & Treas. Notes	Principal and interest of debt paid
June 30, 1843.....	18,542,915.....	\$27,748,188 23.....	\$12,551,409 19.....	\$8,231,000 26.....	\$861,596 55
4.....	19,034,332.....	24,748,188 23.....	1,877,847 95.....	29,320,707 78.....	12,991,902 84
5.....	19,525,749.....	17,093,794 80.....	.....	29,941,853 90.....	8,595,049 10
6.....	20,017,165.....	16,750,926 33.....	.....	29,699,967 74.....	1,213,823 31
7.....	20,508,582.....	38,956,623 38.....	28,900,765 36.....	26,437,403 16.....	6,719,282 37
8.....	21,006,000.....	58,526,349 37.....	21,256,700 00*	35,425,750 59*	15,249,197 21

* Estimated returns not completed.

Present debt, including the amount to be realized on the 1st of May, 1848, of the loans of 1846, 1847 and 1848, \$65,787,008 92.

UNITED STATES COMMERCE.—Ex-
PORTS OF BREADSTUFFS.—Table exhibiting
the aggregate value of breadstuffs and pro-
visions, exported annually, from 1821 to
1851, inclusive:

	Value
Year ending September 30, 1821.....	\$12,341,901
“ “ 1822.....	13,886,856
“ “ 1823.....	13,767,817
“ “ 1824.....	15,059,484
“ “ 1825.....	11,634,449
“ “ 1826.....	11,302,496
“ “ 1827.....	11,685,556
“ “ 1828.....	11,461,144
“ “ 1829.....	13,134,858
“ “ 1830.....	12,075,430
“ “ 1831.....	17,538,227
“ “ 1832.....	12,424,703
“ “ 1833.....	14,209,128
“ “ 1834.....	11,524,024
“ “ 1835.....	12,099,399
“ “ 1836.....	10,614,130
“ “ 1837.....	9,588,359
“ “ 1838.....	9,636,650
“ “ 1839.....	14,147,779
“ “ 1840.....	19,067,535
“ “ 1841.....	17,196,102
“ “ 1842.....	16,902,876
3 months, ending June 30, 1843.....	11,204,123
Year ending June 30, 1844.....	17,970,135
“ “ 1845.....	16,743,420
“ “ 1846.....	37,701,121
“ “ 1847.....	68,701,921
“ “ 1848.....	37,472,751
“ “ 1849.....	38,155,507
“ “ 1850.....	26,051,373
“ “ 1851.....	24,119,293
Total.....	\$559,326,578

Statement showing the amount of Tonnage owned by
each state, engaged in foreign and domestic com-
merce, for the fiscal years 1850 and 1851:

	1850.	1851.
Maine.....	501,424 78.....	536,114 44
N. Hampshire.....	23,096 38.....	25,427 44
Vermont.....	4,530 35.....	3,932 31
Massachusetts.....	685,442 76.....	694,402 93
Rhode Island.....	40,499 81.....	38,050 42
Connecticut.....	113,086 78.....	116,179 85
New-York.....	944,349 20.....	1,841,013 62
New-Jersey.....	80,300 46.....	88,895 90
Pennsylvania.....	258,939 48.....	284,373 64
Delaware.....	16,719 57.....	11,880 83
Maryland.....	193,087 40.....	204,444 54
Virginia.....	74,266 05.....	69,769 42
North Carolina.....	74,218 49.....	40,722 17
South Carolina.....	36,072 13.....	44,187 46
Georgia.....	21,690 14.....	24,185 24
Florida.....	11,272 76.....	7,042 08
Alabama.....	24,157 60.....	21,327 08
Mississippi.....	1,827 62.....	1,404 09
Louisiana.....	250,089 80.....	253,284 93
Missouri.....	28,907 67.....	34,065 46
Illinois.....	21,242 17.....	23,103 45

	1850.	1851.
Kentucky.....	14,820 19.....	12,937 60
Tennessee.....	37,76 05.....	3,587 67
Ohio.....	27,146 54.....	58,352 24
Michigan.....	38,144 49.....	41,774 86
Texas.....	3,897 42.....	4,913 16
California.....	17,591 77.....	58,476 02
Wisconsin.....	—.....	2,946 10
District of Columbia.....	17,010 61.....	22,903 45
Oregon.....	1,063 48.....	1,068 43

Total.....3,535,454 23.....3,771,439 43

Steam Tonnage of the United States in 1850 and
1851:

	1850.	1851.
Steam registered ton- nage.....	44,942 25.....	62,390 13
Steam enrolled and li- censed.....	481,004 65.....	521,216 87
	525,946 90.....	583,607 05

Increase.....57,760 10

Comparison of Tonnage for 1850 and 1851:

	1850.	1851.
Registered tonnage.....	1,585,711 22.....	1,726,307 23
Enrolled and licensed.....	1,949,743 01.....	2,046,132 20

Total tonnage.....3,535,454 23.....3,772,439 43

UNITED STATES PUBLIC DEBT.—

The public debt of the United States and of
the several states, is thus given by a late com-
mercial writer, being taken from the returns
of 1850:

United States.....	\$61,228,238
Maine.....	970,000
Massachusetts.....	2,091,047
New-York.....	23,937,240
New-Jersey.....	62,596
Pennsylvania.....	40,424,737
Maryland.....	15,900,000
Virginia.....	14,400,507
North Carolina.....	977,000
South Carolina.....	3,622,039
Georgia.....	1,903,472
Alabama.....	10,385,938
Mississippi.....	7,271,707
Louisiana.....	16,238,131
Texas.....	11,050,201
Arkansas.....	3,862,172
Tennessee.....	3,337,856
Kentucky.....	4,531,913
Ohio.....	19,173,223
Michigan.....	2,849,939
Indiana.....	6,556,437
Illinois.....	16,612,795
Missouri.....	956,261
Iowa.....	55,000

Total 1850.....\$275,480,676

Total 1843.....198,818,736

Increase in 7 years.....\$76,661,940

This shows an increase of about 30 per cent. in seven years, and returns for 1851 will show an addition to the public indebtedness of 1850 of more than forty millions of dollars.

UNION—ITS CENTRE MOVING WEST.—We have seen the calculation somewhere, that the population of the Union has been sweeping westward, wave-like, at the rate of about 13 miles per annum. At this rate it is a simple problem to tell when we shall reach the Pacific, though as to all afterward there may be some doubt. Already it has ceased to be an adventure of romance, as when Irving wrote his "Astoria," to visit the spot where

"Rolls the Oregon,
And hears no sound save his own dashings;"

and the invitation of Humphreys is divested of all its poetry :

—"Together let us rise;
Seek brighter plains and more indulgent skies,
Where fair Ohio rolls his amber tide,
And Nature blossoms in her virgin pride."

Dr. Patterson, of Philadelphia, thus calculates the centre of representative population.

In 1790, the centre of representative po-

pulation was in Baltimore county, Md., forty-six miles north, and twenty-two miles east, from Washington. In 1800, it was in Adams county, Pennsylvania, sixty-four miles north, and thirty west, from Washington. In 1820 it was in Morgan county, Virginia, forty-seven miles north, and seventy-one west, from Washington. In 1830, it was in Hampshire county, Virginia, forty-three miles north, and one hundred and eight west, from Washington. In 1840, it was in Marion county, Virginia, thirty-six miles north, and one hundred and sixty west, from Washington. Thus, it would appear, that the centre of representative population has kept nearly on the same parallel of latitude for fifty years; the latitude of 1840 being within ten miles of that of 1790. It has in the same fifty years moved westward one hundred and eighty-two miles.

Thus we perceive, that the mass of representative population is moving westward with accelerated velocity. The following statement exhibits the movement West :

From 1790 to 1800, it was.....	13 miles.
" 1800 to 1810, "	39 "
" 1810 to 1820, "	41 "
" 1820 to 1830, "	37 "
" 1830 to 1840, "	52 "

The centre of representative population is now just about the Ohio River.

UNITED STATES—STATES AND TERRITORIES.

Table showing the Estimated Surface of the Territories of the United States, North and West of the regularly organized States of the Union, and the portions of Territory thereof, situated North and South of the parallel of 36° 30' north latitude.

Territories	Square miles north of the parallel of 36° 30'.	Square miles south of the parallel of 36° 30'.	Total square miles
Oregon territory, bounded on the north by the parallel of 49° north latitude, south by the parallel of 42° north latitude, east by the Rocky Mountains, and west by the Pacific Ocean.....	341,463.....	..	341,463
Territory north and west of the Mississippi river, bounded on the north by the parallel of 49° north latitude, east by the Mississippi river, south by the State of Iowa and the Platte river, and west by the Rocky Mountains.....	723,248.....	..	723,248
Wisconsin territory, bounded east by the Mississippi river, and north by the State of Wisconsin, being the balance remaining of the old Northwest Territory.....	22,336.....	..	22,336
Indian Territory, situated west of the States of Missouri and Arkansas, and south of the Platte or Nebraska, held and apportioned in part for Indian purposes.....	190,505.....	58,346.....	238,851
Territory in Upper California and New-Mexico,* situated west of the Rio Grande to its source, and of a meridian line thence to the parallel of 42° north latitude, ceded to the United States by the treaty with Mexico of 1848.....	321,695.....	204,383.....	526,078
Total.....	1,599,247.....	262,729.....	1,861,976
That part of Texas which lies east of the Rio Grande and west of the Nueces river, from the mouth of the former river, up to a line drawn from a point a short distance north of Paso to the source of the Ensenada river, is estimated at....	..	52,018.....	52,018
And the part which lies north of Paso and the Ensenada river, up to latitude of 42° north.....	43,537.....	81,396.....	124,933
Making, together†.....	43,537.....	133,414.....	176,951

* This estimate excludes all that part of Texas which lies outside of its limits, as designated by the yellow shaded lines on Disturnal's map of Mexico.

† This estimate, as will be seen, limits our acquisitions of territory from Mexico by the late treaty, exclusively to those portions of country lying west of the Rio Grande.

TEXAS IN THREE DIVISIONS.

1st. Between the Sabine and Nueces rivers, south of Ensenada river (T. proper)	Sq. miles. 148,469
2d. Between the Nueces and Rio Grande, south of Ensenada river	52,018
3d. North of Paso and the Ensenada river (Santa Fe country)	124,933
Total	325,520

1st. Number of miles of coast acquired by the annexation of Texas, from the mouth of the Sabine to the Rio Grande	400
2d. Number of miles of coast on the Pacific, including Oregon and California. In California, 970 ; Oregon, 500 ; Straits of Juan de Fuca, 150	1,620
Total, including Texas	2,020

TABLE EXHIBITING THE AREAS OF THE SEVERAL STATES AND TERRITORIES OF THE UNITED STATES IN SQUARE MILES AND ACRES.

Free States	Square miles	Acres	Slave States	Square miles	Acres
Maine	35,000	22,400,000	Delaware	2,120	1,356,800
Vermont	8,000	5,120,000	Maryland	11,000	7,040,000
New-Hampshire	8,030	5,139,200	Virginia	61,352	39,265,280
Massachusetts	7,250	4,640,000	North Carolina	45,500	29,120,000
Rhode Island	1,200	768,000	South Carolina	28,000	17,920,000
Connecticut	4,750	3,040,000	Georgia	58,000	37,120,000
New-York	46,000	29,440,000	Kentucky	37,680	24,115,200
New-Jersey	6,851	4,384,640	Tennessee	44,000	28,160,000
Pennsylvania	47,000	30,080,000	Louisiana	46,431	29,715,840
Ohio	39,964	25,576,960	Mississippi	47,147	30,174,080
Indiana	33,806	21,637,760	Alabama	50,722	32,462,080
Illinois	55,405	35,459,200	Missouri	67,389	43,123,200
Michigan	56,243	35,995,520	Arkansas	52,198	33,406,720
Iowa	50,914	32,584,960	Floridas	59,268	37,931,520
Wisconsin	53,924	34,511,360			
Total of the free States,	a 454,340	290,777,600	Total of the slave states	b 610,798	390,910,720
Texas				325,520	208,332,800
District of Columbia				c 50	32,000

TERRITORY NORTH AND WEST OF THE MISSISSIPPI RIVER AND EAST OF THE ROCKY MOUNTAINS.

	Sq. miles	Acres
Bounded north by 49° north latitude, east by Mississippi river, south by State of Iowa and Platte river, and west by Rocky Mountains	723,248	462,878,720
Indian territory, situated west of the States of Arkansas and Missouri, and south of the Platte river	248,851	159,264,640
Old northwest territory, balance remaining east of the Mississippi river and north of Wisconsin	22,336	14,295,040
Total of old territory and organized into States	d 994,435	636,438,400

TERRITORY EXCLUSIVE OF OLD TERRITORY EAST OF THE ROCKY MOUNTAINS.

	Sq. miles	Acres	Sq. miles	Acres
Oregon	341,463	218,536,320	a 454,340	290,777,600
California	448,691	287,162,240	b 610,798	390,910,720
New-Mexico*	77,387	49,527,680	c 50	32,000
Texas*	325,520	208,332,800	d 994,435	636,438,400
Total	1,193,061	763,559,040	2,059,623	1,318,158,720

Length of the Atlantic coast to the mouth of St. Mary's river	1,450	“
Length of the Atlantic coast from St. Mary's to Cape of Florida	450	“
Length of the Gulf coast to the mouth of Sabine	1,200	“
Total	3,100	“

The new States are larger than some of the old ones.

Missouri is the largest State at present, except Texas, which is to be divided into four States.

The area of the State of California, according to an estimate made on Preuss's map of 1848, is 158,500 square miles.

ESTIMATED SURFACES OF OTHER STATES.

California is about $3\frac{1}{2}$ times larger than Louisiana	Sq. miles. 46,431
“ “ $2\frac{1}{2}$ “ “ Missouri	67,380
“ “ $4\frac{1}{4}$ “ “ Kentucky	37,680
“ “ $2\frac{1}{2}$ “ “ Virginia	61,352
“ “ $3\frac{1}{2}$ “ “ New-York	46,000
“ “ $3\frac{1}{2}$ “ “ Pennsylvania	47,000

* Taking the Rio Grande as the boundary.

The average distance of the sea-coast from the eastern boundary of the new state of California, is.....	212 miles.
Total length from north to south.....	764 "
Length of sea-coast.....	970 "

The surface of Deseret, estimated on Preuss's map, is as follows :

Part situated in Oregon.....	Sq. miles 20,000
" " California territory.....	340,000
" within proposed limits of State of California.....	70,000
Total.....	430,000

Total surface of Old Territory east of the Rocky Mountains, in square miles.....	994,435
Total in acres.....	636,428,400
Total of new territories west of the Rocky Mountains, in square miles.....	867,741
Total in acres.....	555,226,240
Texas in square miles.....	325,520
Texas in acres.....	208,332,800
Grand total of territories and Texas, in square miles.....	2,187,490
Grand total in acres.....	1,399,997,440
Total north of 36° 30', in square miles.....	1,642,784
In acres.....	1,051,381,710
Total south of 36° 30', in square miles.....	545,702
In acres.....	348,515,680

LENGTH OF THE UNITED STATES SEA-COAST.

	Miles
Atlantic coast.....	1,000
Gulf ".....	1,600
Pacific ".....	1,620—4,220
Total length of "shore line".....	33,063

UNITED STATES SEA AND RIVER SHORE LINE.—Col. Abert, of the Topographical Engineers, thus answers to the questions of government :

Question 1. "The extent of shore line of each of the rivers of the United States, as far as navigable for steamboats of the lightest draft now used, designating the extent of shore line of each principal river and its tributaries."

Answer. Shore line of rivers, to head of tide water, from Maine to Texas. The head of tide water is assumed as the limit of steamboat navigation, as impeding falls or rapids are usually encountered at that point, above which many of our rivers are adapted to steam navigation, but to what extent is not sufficiently known..... 10,501 miles.

Shore line of rivers of Texas..	1,210 "
Mississippi (lower) islands and bayous.....	3,372 "
Mississippi (upper) and tributaries.....	2,736 "
Big Black, Yazoo, and bayous..	1,190 "
Red River and tributaries.....	4,924 "
Arkansas River and tributaries..	3,250 "
Missouri River and its tributaries	7,830 "
Ohio River and tributaries.....	7,342 "
Total miles, including both banks and rivers.....	47,355 "

Question 2. "The extent of frontier of the United States, bordering on the British possessions."

Answer. From the mouth of St. Croix to the Pacific ocean, by treaty lines, 3,303 miles.

Question 3. "The extent of frontier of the United States, bordering on Mexico."

Answer. From the mouth of the Rio

Grande to the Pacific ocean, by treaty lines, 1,456 miles.

Question 4. "Extent of shore line of the northern lakes, including bays, sounds, and islands."

Answer. American coast, or shore line.....	3,620 miles.
British coast, or shore line.....	2,620 "
Total miles.....	6,240 "

UNITED STATES.—IMMIGRATION INTO.—That the world is watching the progress of these United States, has been so often repeated, that national vanity may be pardoned even when displayed on the puny attempts of some miserable tourist to disparage the vastness he cannot grasp, and the institutions he cannot comprehend. But while this great and preponderating influence, looming up in futurity like a mountain, and growing and expanding with every year, that tests the worth and proves the stability of our noble and free government, may well excite feelings of the proudest patriotism, let us be willing to analyze, most carefully, every force that swells the aggregate of our national strength, and ferret out every element of weakness and decay.

It is for the republican institutions of America we hope and fear most. It is not because the soil of America offers an asylum, and her corn fields bread to the oppressed, that she is to be considered the great problem with the solution of which is connected the happiness of our very race. Intimately connected with this question of the stability of our republican institutions, is to be viewed

the influence of the vast accessions of inhabitants to our shores from distant lands. It has been the policy of America, from mingled motives, hitherto to encourage this daily-increasing tide of foreigners. And the liberality of our government, and the course of legislation, joined to the cheapness and excellence of the soil, have attracted from the earliest period of the Republic, the poor, the oppressed, and the adventurous, of all lands. The only checks in the transportation of the hosts have been extreme poverty, timidity, and the lack of ships adequate to the mighty task.

It was early felt that wild luxuriance of nature needed hands to gather it, and that the ancient and boundless forests required something more than the natural increase of the first colonists to fill them during the first century, in order that they might become arable land. Foreign aid, too, had been received with deep gratitude during the war of the Revolution, and the first bands of immigrants were hailed by our fathers as brothers and friends. The first generation of those who succeeded the men of the Revolution has passed away. The three millions of the Revolution, and the six millions of the year 1810, have become now twenty millions, and the same necessity does not appear to exist in respect to a further increase of population. The terrible evils of a thickly-populated country, as shown in the misery and famine of some portions of the Old World, have excited sentiments of doubt, that with all the unbounded frontier and the great valley of the Mississippi before us, we may yet complain of narrow limits. Party spirit has run high, and our fellow-citizens of foreign birth have, it has been thought, taken too prominent a part in political affairs, and by espousing in force one of the great parties have rendered themselves obnoxious to many of opposite sentiments. Besides, many neutral men have been fearful that responding to a distinction unknown to others, and called on and marshaled by their own leaders, they might possibly hold the most dangerous position in a free state, that of a minority ready to turn the beam of political victory as fraud and ambition among their leaders might happen to sway. Even the friend of the foreigner must admit that many ignorant immigrants come yearly among us, and that the education proper for a freeman is not easily acquired after the years of youth. Many, especially among those who do not speak our language, are disposed to form associa-

tions among themselves, thus socially, if not politically, dividing themselves from our native population. Another, but less important consideration comparatively, is, that many of these immigrants being left in a state of destitution at the point of debarkation, or overtaken by poverty or disease, become a very serious tax to the community. At this we would not repine, although it appears hard that the land which has reaped the fruit of the strength and prime of the laborer's years should send him forth to be fed from the bread of another people.

It is then a question, acknowledged by all to be of the utmost importance, to ascertain clearly the amount of the foreign element in the United States. If the clamor on this subject is ill founded let us dismiss it from our minds; and if, on the other hand, poverty, ruin and anarchy, are like a pest to follow in the track of these increasing myriads, it is time to establish a *cordon sanitaire*. We do not know of any estimate, previous to those of Mr. Chickering's, found on reliable data, and we hasten to present to our readers some of that gentleman's results. The foundation is the custom-house returns of the number of foreign passengers from 1820:

Years	Total	Years	Total
1820-21	5,993	1834-35	52,899
1821-22	7,329	1835-36	62,473
1822-23	6,749	1836-37	78,083
1823-24	7,088	1837-38	59,363
1824-25	8,532	1838-39	52,163
1825-26	10,151	1839-40	84,146
1826-27	12,418	1840-41	83,504
1827-28	26,114	1841-42	101,107
1828-29	24,459	1842-43	75,759
1829-30	27,153	1843-44	74,604
1830-31	23,074	1844-45	102,415
1831-32	45,287	1845-46	147,051
1832-33	56,547	1846 (1 qr.)	55,106
1833-34	65,335		

RECAPITULATION.

Years	Total	Years	Total
1820-25	35,691	1820-30	135,986
1825-30	100,295	1830-40	579,370
1830-35	243,142	1840-46	638,949
1835-40	336,228		
1840-45	436,792	1820-46	1,354,305
1845-46	202,157	Proportion	100

These returns ought to be increased by the numbers who land in the British provinces and find their way to the United States. The estimate of Mr. Chickering, of an increase in this way of 50 per cent. to be added to the custom-house returns, would furnish a table in which the annual foreign increment is compared with the whole increase.

PROPORTION OF FOREIGN IMMIGRANTS TO THE INCREASE OF THE POPULATION OF THE UNITED STATES.

Years	Population	Average Annual Increase	Foreign Passengers			Per cent.	Proportion
			Custom House	Elsewhere	Total		
1820-21.....	9,638,191.....	282,465.....	5,993.....	2,996½.....	8,989½.....	3.18.....	1 to 31.43
1821-22.....	9,920,656.....	290,743.....	7,329.....	3,664½.....	10,993½.....	7.78.....	26.45
1822-23.....	10,211,399.....	299,264.....	6,749.....	3,374½.....	10,123½.....	3.38.....	29.57
1823-24.....	10,510,663.....	308,035.....	7,088.....	3,544.....	10,632.....	3.45.....	28.98
1824-25.....	10,818,698.....	317,062.....	8,532.....	4,266.....	12,798.....	4.03.....	24.78
1825-26.....	11,135,760.....	326,354.....	10,151.....	5,075½.....	15,226½.....	4.66.....	21.40
1826-27.....	11,462,114.....	335,919.....	12,418.....	6,209.....	18,627.....	5.54.....	18.04
1827-28.....	11,798,033.....	345,763.....	26,114.....	13,057.....	39,171.....	11.32.....	8.83
1828-29.....	12,143,796.....	355,897.....	24,459.....	12,229½.....	36,688½.....	10.30.....	9.71
1829-30.....	12,499,693.....	366,327.....	27,153.....	13,576½.....	40,729½.....	11.11.....	9.00
1830-31.....	12,866,020.....	368,914.....	23,074.....	11,537.....	34,611.....	9.38.....	10.66
1831-32.....	13,234,934.....	379,491.....	45,287.....	22,643½.....	67,930½.....	17.90.....	5.59
1832-33.....	13,614,425.....	390,373.....	56,547.....	28,273½.....	84,820½.....	21.72.....	4.61
1833-34.....	14,004,798.....	401,565.....	65,335.....	32,667½.....	98,002½.....	24.40.....	4.10
1834-35.....	14,406,363.....	413,082.....	52,899.....	26,489½.....	79,388½.....	19.21.....	5.21
1835-36.....	14,819,445.....	424,925.....	62,473.....	31,236½.....	93,709½.....	22.05.....	4.54
1836-37.....	15,244,370.....	437,109.....	78,083.....	39,041½.....	117,124½.....	26.79.....	3.74
1837-38.....	15,681,479.....	449,642.....	59,363.....	29,681½.....	89,044½.....	19.80.....	5.05
1838-39.....	16,131,121.....	462,535.....	52,163.....	26,081½.....	78,244½.....	16.91.....	5.92
1839-40.....	16,593,656.....	475,798.....	84,146.....	42,073.....	126,219.....	26.52.....	3.77
1840-41.....	17,069,454.....	489,441.....	83,504.....	41,752.....	125,256.....	25.59.....	3.91
1841-42.....	17,558,895.....	503,474.....	101,107.....	50,553½.....	151,660½.....	30.12.....	3.32
1842-43.....	18,062,369.....	517,911.....	75,159.....	37,579½.....	112,738½.....	21.76.....	4.60
1843-44.....	18,580,280.....	532,761.....	74,607.....	37,303½.....	111,910½.....	21.05.....	4.77
1844-45.....	19,113,041.....	548,037.....	102,415.....	51,207½.....	153,622½.....	28.03.....	3.57
1845-46.....	19,661,078.....	563,752.....	147,051.....	73,525½.....	220,576½.....	39.12.....	2.56
1846 3d qr.....	—.....	—.....	55,106.....	27,553.....	82,659.....	—.....	—
Total 26 years.....	—.....	—.....	1,354,305.....	677,152½.....	2,031,457½.....	—.....	—

RECAPITULATION.

Years	Population	Average Annual Increase	Foreign Passengers			Per cent.	Proportion
			Custom House	Elsewhere	Total		
1820-25.....	51,099,607.....	1,497,569.....	35,691.....	17,845½.....	53,536½.....	3.57.....	1 to 27.98
1825-30.....	59,039,396.....	1,730,260.....	100,295.....	50,147½.....	150,442½.....	8.69.....	11.51
1830-35.....	68,126,540.....	1,953,425.....	243,142.....	121,571.....	364,713.....	18.67.....	5.36
1835-40.....	78,470,071.....	2,250,009.....	336,228.....	168,114.....	504,342.....	22.41.....	4.47
1840-45.....	90,384,039.....	2,591,624.....	436,792.....	218,396.....	655,188.....	25.28.....	3.96
1845-46.....	19,661,078.....	563,572.....	147,051.....	73,525½.....	220,576½.....	39.12.....	2.56
1820-30.....	110,139,003.....	3,227,829.....	135,986.....	67,993.....	203,979.....	6.31.....	1 to 15.83
1830-40.....	146,596,611.....	4,203,434.....	579,370.....	289,685.....	869,055.....	20.67.....	4.84
1840-46.....	110,045,117.....	3,155,376.....	583,843.....	291,221½.....	875,064½.....	27.75.....	3.63
Total, 25½ years.....	366,780,731.....	10,586,639.....	1,299,199.....	649,599½.....	1,948,798½.....	18.40.....	5.44

Assuming the rate of increase of the whole white population of the United States to be 26-28 per cent. in each decade from 1790, 28-80 per cent. in the free, and 21-54 in the slave states, we have

	1790	1800	1810	1820	1830	1840
Free States.....	1,901,046.....	2,448,667.....	3,154,038.....	4,062,600.....	5,232,825.....	6,740,209
Slave States.....	1,271,488.....	1,545,470.....	1,878,490.....	2,283,269.....	2,775,270.....	3,373,288
Aggregate.....	3,172,534.....	3,994,137.....	5,032,528.....	6,345,869.....	8,008,095.....	10,113,497
Differences.....	—.....	2,290.....	26,978.....	43,515.....	60,722.....	76,188
Orig. States and Territories.....	3,172,534.....	3,996,427.....	5,059,506.....	6,389,384.....	8,068,817.....	10,189,685
Add Louisiana.....	—.....	—.....	34,311.....	41,704.....	50,691.....	61,622
Add Florida.....	—.....	—.....	—.....	—.....	18,385.....	22,347
Total.....	3,172,534.....	3,996,427.....	5,093,817.....	6,431,088.....	8,137,893.....	10,273,654
Foreign immigration.....	—.....	307,678.....	768,187.....	1,430,906.....	2,399,485.....	3,922,152
Tot. White Population, U. S.....	3,172,534.....	4,304,105.....	5,862,004.....	7,861,994.....	10,537,378.....	14,195,806

Assuming 267,567 as the foreign population in 1790, and considering their increase to be at the average rate of 26-28, we have—

	1800	1810	1820	1830	1840
For'n immigration from 1790 to 1800.....	267,567	337,996	426,838	539,031	680,714
1800 to 1810.....	363,001	458,415	578,908	731,073	
1810 to 1820.....		494,392	624,342	788,449	
1820 to 1830.....			665,647	840,611	
1830 to 1840.....				888,705	
	267,567	700,997	1,379,645	2,407,928	3,929,552
Differences.....	40,111	67,190	51,261	plus 8,443	plus 7,400
Total Foreign Population in U. S.....	307,678	768,187	1,430,906	2,399,485	3,922,152

By comparing these tables, we find that a probable amount of four millions of our population is due to the immigration of foreigners, for the last fifty years. In other words, had immigration been stopped, our population would be at this time, other things being equal, about sixteen millions of souls. A nearer approximation is considered to be :

	Proportion per cent of the Foreigners to the	
	Increase of the whites	Total white population
Foreign immigration from 1790 to 1800, including the immigrants and their children, from their arrival to the next census.....	307,687	27.18..... 7.14
Their natural increase at the rate of 26.28, &c., per cent. in ten years.....	80,872 —
Foreign immigration as above, from 1800 to 1810.....	379,637	24.36..... —
Foreign population in 1810.....	768,187	..... 13.10
Their natural increase at the above rate, in 10 years.....	201,916 —
Foreign immigration as above, from 1810 to 1820.....	460,803	23.04..... —
Foreign population in 1820.....	1,430,906	..... 18.20
Their natural increase at the above rate, in 10 years.....	376,110 —
Foreign immigration as above, from 1820 to 1830.....	592,469	22.04..... —
Foreign population in 1830.....	2,399,485	..... 22.77
Their natural increase at the above rate, in ten years.....	630,699 —
Foreign immigration as above, from 1830 to 1840.....	891,968	24.32..... —
Foreign population in 1840.....	3,922,152	..... 27.62

But surely, although our numbers would not have swelled to their present by four millions, had it not been for foreign immigration, we cannot consider this as representing at all the number of true foreigners, allowing that all born without our territorial limits are foreign in heart to our commonwealth. Many of these foreigners, and these sons of foreigners, have married the daughters of America, and shall the children of an American mother be thus considered as foreigners? this, in our opinion, is an entirely erroneous system of calculation. The increase of the foreign population, even that portion which embraces the children of foreigners on both father and mother's side, is in every sense American; and the proper course to determine the foreign element is, casting out of view the progeny, to inquire how large a population of foreign birth is now living in the United States. Assuming the average age of this population to be 25 years, and the ratio of mortality to be the mean of these tables, in England, from which country the largest proportion of the new-comers emigrate, and striking out of view the increase by birth, we have as the surviving number of the foreign immigration in 1840—a result as follows :

	Estimated No. of emigrants.	Surviving in 1840	Surviving in 1846
1790 to 1800.....	267,567	82,154	50,570
1800 to 1810.....	363,001	177,853	137,801
1810 to 1820.....	494,392	317,408	274,299
1820 to 1830.....	665,647	530,018	468,388
1830 to 1840.....	888,705	831,129	757,754
1840 to 1846.....	875,704	.....	842,660
		1,938,562	2,431,472

If we are correct in our opinion, and we believe that the most enthusiastic partisan will not consider the children of foreigners, born on this soil, as any other in feeling and sentiment than the progeny of native citizens, we have presented a result approximating nearly to the number of persons born in other lands and living in the United States during the year 1846, and comprising all who, in any proper sense, can be regarded as the true foreign element in our population.

Considering the ravages of disease among the large class of poor and improvident immigrants, and the fatigues of the voyage hither and subsequent travel, together with the mortality incident to settlers in a new country, and one differing much in climatic character from that of their birth, the deductions made from the gross number of estimated arrivals are probably below the truth; and the number of persons now residing in

the United States may possibly not much exceed two millions. Of this number, according to Dr. Chickering, two thirds may be regarded as males, and a very large portion, even at the time of immigration, is adult. Of course, the survivors of all the years of immigration prior to 1830, must be set down as adults. So that the proportion of adults to children may be, say three to one. One half of the whole population surviving in the year 1846, may be seen to consist of those who emigrated to this country prior to the year 1835. This is a portion that, from their mature age and acquaintance with the institutions of our country, besides the possession of comparative wealth, must exert a great influence in forming the social character of more recent comers. They are, so to speak, a vast teaching class, dispersed over the whole country, advising the inexperienced and checking the rash among their countrymen. But it is not our purpose to look at any arguments that concern the political aspects of the question. If we have alluded to any, it was merely to call attention in this way to the acknowledged importance of the inquiry, and then treat it in a purely economical and statistical manner. The value of this population, as workers, is worth a moment's consideration. The estimated number of the inhabitants of the United States in 1846, was 20,557,823, as will be seen by reference to the article on the "Progress of the American Union," derived from the investigations of Wm. Darby, Esq. The Secretary of the Treasury gives us the sum total of the productions of the country, for the year included in the report of 22d July, 1846, reckoned in dollars, an aggregate of 3,000,000,000. The amount of individual average production is as near as may be, \$150 in one year. It must be remembered that of the foreigners a larger proportion than the average are adult males; and of these more than the usual number comparatively belong to that class most actively employed in physical production. If we assume but two millions as the number of the foreign population, their aggregate annual production is the vast amount of \$300,000,000, for 1846. In dwelling on the necessity and value to a country of the working class, we would not depreciate the importance of the managing and directing class—but we say that, as the former are measured in importance by number, the latter are estimated in reference to enterprise, skill and science. A skilful foreman or overseer may wield as easily, and direct the physical forces of one hundred as easily as ten laborers; and though cultivation and intelligence are to be desired in the one who labors with his hands, they are not so indispensable as in the labors of contrivance and management.

In conclusion, we must express the obli-

gations due to the author of the pamphlet alluded to in this article, Dr. Chickering, who has furnished us a copy, and gives many interesting notes in a private letter to our address.

UNITED STATES—IMMIGRATION INTO.—

The annual report from the State Department, on the subject of immigration, shows the following facts. The statements apply to the calendar year ending 31st December, 1851. The arrivals of passengers from foreign ports, into the several districts of the United States, for that year, were, as given below:

Maine.....	5,360
New-Hampshire.....	108
Massachusetts.....	25,579
Rhode-Island.....	175
New-York.....	294,445
Pennsylvania.....	18,556
Maryland.....	8,589
Virginia.....	29
South Carolina.....	1,811
Georgia.....	510
Alabama.....	344
Florida.....	81
Louisiana.....	52,011
Texas.....	1,208
Total.....	408,828

This number was classified thus:

Males.....	245,017
Females.....	163,745
Sex not stated.....	66
Of these there belonged to the United States.....	29,367
To foreign countries.....	379,461
Embarked from Great Britain and Ireland.....	208,248
Embarked from Ireland alone.....	55,874
Embarked from Germany.....	72,283
Embarked from France.....	20,107

The report covers the fifteen months, from September 30th, 1850, to the close of the last calendar year; but the above figures embrace only the twelve months of 1851. Hereafter I shall probably give the exact number for the omitted quarter.

Very erroneous impressions exist in the United States and elsewhere, as to the extent of immigration into the country, and the number of inhabitants of foreign birth now residing in it. In a recent debate in the British Parliament, a prominent member in the House of Lords, the Archbishop of Cashel, stated that there were 7,500,000 Irishmen in the United States; and I have seen in many newspapers, what purports to be an elaborate and detailed statement of the number of Germans among us, from which it would appear that there were 5,000,000 of that nation in this country. These accounts are all ridiculous exaggerations. The report of the Superintendent of the Census furnishes the following very useful table, which enables us to correct these errors, and presents a very clear view of the subject.

The following statement will show the accessions to our population, from immigration, from 1790 to 1850:

Number of foreigners arriving from 1790 to 1810	120,000
Natural increase, reckoned in periods of ten years	47,560
Number of foreigners arriving from 1810 to 1820	114,000
Increase of the above to 1820	19,000
Increase from 1810 to 1820, of those arriving previous to 1810	58,450
Total number of immigrants, and descendants of immigrants, in 1820	359,010
Number of immigrants arriving from 1820 to 1830	203,979
Increase of the above	35,728
Increase from 1820 to 1830, of immigrants and descendants of immigrants, in the country in 1820	134,130
Total number of immigrants, and descendants of immigrants, in the United States in 1830	732,847
Number of immigrants arriving from 1830 to 1840	778,500
Increase of the above	135,150
Increase from 1830 to 1840, of immigrants and descendants of immigrants, in the United States in 1840	254,445
Total number of immigrants, and descendants of immigrants, in the United States in 1840	1,900,9d2
Number of immigrants arriving from 1840 to 1850	1,542,850
Increase of the above at twelve per cent.	185,142
Increase from 1840 to 1850 of immigrants and descendants of immigrants, in the United States in 1840	722,000
Total number of immigrants in the United States since 1790, and their descendants in 1850	4,350,934

The complete report on the census will supply an exact classification of our population by nativity, as well as by age and race. In the mean time, it may be said that the census tables show the actual number of foreigners arrived in the United States from 1790 to 1850—sixty years—to have been 2,753,000, of whom it is not at all likely that more than 2,000,000 survived in June of the latter year. In the two years that have since elapsed, about 700,000 have arrived, so that of the whole population, now amounting to 25,500,000, not more than 2,700,000 are really of foreign birth.

About one-half the entire immigration into the United States, for the last twenty years, has been of the Irish people; about one-fourth Germans, and the remaining quarter consists of persons belonging to nearly every nation on the face of the earth. It may be assumed, therefore, that we have 1,350,000 Irish, and 675,000 Germans, among our population.

UNITED STATES POPULATION—OPERATION OF THE LAWS OF POPULATION IN EUROPE AND THE UNITED STATES.—Russia, and the United States, according to Mr. Alison, in his lately published work on "Population," are the two powers of the earth, which, though latest upon the stage of action, and last to be recognized, are advancing in population with the most rapid and amazing strides. In the one, he recognizes the element of despotism struggling in its contests with man, and marching steadily onward by

conquests over him; in the other, the elasticity, vigor and energy of democracy, overcoming all the obstacles of nature, and pressing forward into the depths of the wilderness, to subdue it into activity and life.

The comparison and the contrast are striking. Whilst all the original states of Christendom, where the battles of the reformation, of regeneration, of civilization, have been fought and won, and all the principles of progress been most early sown, exhibit a gradual decline, a stationary grade, or, at furthest, a slow advance; in the savage wilds of the remote North, whence emerged the barbarians, who, in early times, spread dismay throughout Europe, among the eternal forests which sweep from ocean to ocean, in a newly-discovered continent, far across the seas, have sprung up, as if by enchantment, and actuated by the most opposite principles, two great and overshadowing powers, differing from every other in the world, and yet identical, the one with the other, in this, that their great progress has been unchecked and uncontrolled by a single counter influence, and promises developments to which, perhaps, history does not present the parallel.

There can be no more instructive lesson than the reflection teaches. In the just pride and exultation of the American heart, it is not unfrequent that our hosts, swarming over the mountains, and across the continent, are pointed to, as evincing the glorious career of our country. But let it be remembered, that, if in this alone, or in any degree, consisted the glory, or were indicated the destinies of this American republic, despotic Russia, of all the nations in Europe, the lowest in the scale of civilization, is our only rival!*

We have said before, and now repeat the expression, that, although an extension of territory and a rapid augmentation of population be important elements of national prosperity and power, they are not *necessarily* so, and are only so whilst public virtue shall subsist, and, so far as our country is concerned, whilst it is administered and governed upon those sound political principles which, born in the throes of the Revolution, received their earliest manifestation in the wise constitution adopted by the fathers of our liberty. Abandon these principles, and all the swarming millions of India, and the interminable regions of Asia, would afford only one gloomy picture of oppression and wrong; and the degeneracy and impotency that would result, must render us weaker than when, seventy years ago, spread over a narrow belt along the shores of the Atlantic, a handful, we met and resisted the encroachments of the most warlike nation on earth.

* How extraordinary, then, that so profound a statistical writer as Prof. Tucker could say: "The numbers of a people are at once the source and index of its wealth," &c. See his work on *Progress of Population in the United States*.

"A diseased action of the principles of population; the production of an augmentation of human beings at a time when the circumstances of society require that their numbers should be stationary; the multiplication of misery and suffering throughout the community, by the removal of the limitations which nature has provided for the regulation of the principles of increase; the excesses of tyranny, which dry up the sources of subsistence, and close, for a season, the fountains of human increase—produce effects of a wide-spread and durable kind, and which cannot be repaired, except in the lapse of ages."^{*}

These considerations give importance to all questions relating to population, and have stimulated the investigations being made in most modern nations, having for their object the permanent interest and welfare of man, considered in his physical adaptations.

At no period, until within the last fifty years, have the laws which regulate population, stimulating or retarding it in a legitimate or vicious action, received any portion of attention from the philosophers of the age. Scarcely have any other than the most general records been kept, even of the aggregate numbers included within the community. We must be indebted to conjecture and inference for our facts, even in the case of the ancient states of Greece and Rome, where such would have been least expected, and the most contradictory and variant statements are received from the first historians. The physical character, relations, adaptations, necessities, were altogether lost sight of, as insignificant, in the comparison and study of those moral, religious and scholastic systems with which genius occupied itself in every age and country.

Political economy having entered upon its high mission, man began to be elevated to his true position. What he is? why he is so? what he might be under sound laws? what his connections with other men, and how dependent? why he is social? when he marries, and under what circumstances? how he increases least or most? the just limitations and stimulants to such increase? how affected by government, by education, by different stages of prosperity? when most prosperous and happy? and the thousand other nice points, whose enumeration is unnecessary, but which are elaborated in the science of population, upon the data furnished in most civilized communities, by the reports of statistical associations and public census returns; these become subjects of constant investigation.

It is evident that, without authentic data, which government alone can adequately furnish, all reasoning and theories must be altogether vain. Hypothesis and theory will clash together, and, as in the ancient systems of phi-

losophy which despised deduction, mankind be none the better informed. It is in this view that our censuses are fully appreciated; that precision and accuracy become most important considerations, and that the extent and variety of the information collected, are among the highest objects of consideration.

In casting our eyes over the world, we shall be surprised to find that, under the influence of despotic, irresponsible, irregular and altogether arbitrary governments, the fairest and most productive regions, where population in the earliest ages swarmed, have been almost depopulated. This is principally the case in the East. Throughout the Turkish dominions in Candia, Crete, Cyprus, Rhodes, Moldavia, are the most melancholy features exhibited—the whole population being scarcely twenty-eight to the square mile, about one-fifth part of what it was in the days of the Roman empire, and one-tenth part of countries more unfavorably situated in different parts of Europe.*

"Egypt, which was so celebrated in antiquity," says Mr. Alison, "languishes under the tyranny of Oriental despotism, and the descendants of those multitudes who erected the stupendous monuments of Egyptian power, are thinly scattered over the plains which are yet loaded with the richness of an undecaying soil."[†]

In the wars of the Emperor Justinian and Belisarius, Africa was depopulated; and, it is certain that, under the present tyrannical government of the Barbary states, no improvement can take place. Mr. Poiret describes the country as a desert, where it is a rare thing to see two or three villages in a day.‡ In regard to Syria, Palestine and Asia Minor, the traveler, Volney, remarked: "So feeble a population, in a country so fertile, may well excite our astonishment, which will be still increased, if we consider its population in ancient times, of which the innumerable ruins and traces of population afford ample proof."

In India, the most prolific region in the world, where, almost spontaneously, the soil yields two or three crops in the year, and the wants of the inhabitants are the fewest possible, the highest proportion of population to the square mile is not more than one-third of what it is in England—and yet the history of civilization in that country carries us almost to the infancy of man. Universal poverty prevails under a system of economy and governmental policy which has effectually destroyed all energy, industry or hope. "When we contemplate," says Alison,§ "the moral and political evils to which the Indian population are subjected; when we behold them neglected by the sovereigns, debased by the priesthood and plundered by the army; when we reflect on the insecure tenure by which

* See Alison, i., 324, Malte Brun, Humboldt, etc.

† Alison, i., 326.

‡ Letters on Barbary, p. 336.

§ Alison, i., 370.

* Alison's Principles of Population, vol. i., p. 3.

the ryot holds his property, the enormous abuses to which he is subjected, and the utter want of all capital to facilitate his undertakings; when we recollect that this unfortunate people are kept in the deepest ignorance of every useful art by the priesthood, and that the ravages of intestine war, or the extortions of mercenary troops, have long spread through every corner of the realm—the subject of astonishment comes to be, how the population is so great as it actually is? That the population of China should be vast, as indeed it is, various powerful causes, both natural and the result of the society which obtains there, might be assigned; but, that such a population should be reduced to the lowest possible stage of comfort, confined to the merest limits of subsistence, is a fact only to be explained in the arbitrary and despotic character of the government. The great empire of Japan is, however, an anomaly in all the East, and, according to travelers, exhibits very general industry, enterprise and comfort, throughout all classes of the people, without any principles of freedom. The sovereign has taken industry under his imperial patronage. After enumerating the abuses of government in Persia, Mr. Alison finds occasion for a beautiful contrast “between Persia (shrunk now to less than a tenth part of its ancient greatness, population and power, and crouching before the encroachments of Muscovite dominion) and Great Britain, the abode of naked savages in the time of Xerxes and Darius, but now planting its colonies in every quarter of the globe, and sending its victorious arms from the shores of the Ganges into the heart of Asia and the cradle of Mohammedan power!”*

Let us pass now to Europe, and glance hurriedly at each of its states. Its population to the square mile, under a far better regulated condition of affairs, is double that of Asia. In France, before the revolution, the oppressions of the nobles and government depressed all industry and energy; labor averaged, it is said, 76 per cent. cheaper than in England, agricultural profits were small, and general ignorance prevailed. That France has greatly improved under the late government, will not be questioned, though population is much more sparse than in England.

Switzerland presents the example of extraordinary prosperity and industry, enjoyed by a whole population, in a country naturally magnificent, but in no other respects less favored than its neighbors. Under the best political institutions, the Swiss are the object of all admiration; and, in some of their cantons, adversity of population exists, exceeding that of Ireland, and yet comfortable and happy. Flanders and Holland, by virtue of the fertility of their soil, the free and hardy spirit of their government and the untiring patience, industry and enterprise of the people, vie with Switzerland in domestic comforts and pros-

perity. The proportion of population to territory, is more than double that of either Great Britain or France. Though population be very thin throughout Sweden and Norway, yet the physical condition and intelligence of the people are highly commended by travelers, and the mild and equitable government, which in no respect represses industry.

In Russia, we find a widely different state of things; though the population be vast, and augmenting at a ratio of one hundred per cent. in forty-nine years, yet is the condition of the masses degraded, and they are scarcely possessed of more than the mere absolute necessities of life. The whole peasantry, or agricultural population, are slaves; and, as such, can have none other than the most limited desires and aspirations. The nobles abound in wealth. “No situation,” says Mr. Alison, “more favorable to the mere multiplication of mankind can be imagined, than that of a country in which the government is sufficiently regular and powerful to secure, to a certain extent, the fruits of industry, and afford to the laboring classes an ample supply of the necessaries of life, while it is not so just and free as to afford the means of individual elevation, or develop the love of property or the influence of artificial wants among the people.”

Poland, Italy, Spain, Portugal and Denmark, present the most melancholy pictures of the influence of bad governments and oppressions, upon regions, favored in every way by nature, and once the most prosperous and happy in the world. The oppressions of the Polish nobility keep down population to the lowest state, and render it lower, almost, than anywhere else in Europe. “In Italy, population advances with rapidity, in consequence of the ignorance, the absence of foresight, and the total lack of artificial wants among the people. From the ecclesiastical tyrannies and taxations of Spain, its present limited population results. In the immense ruins that exhibit themselves, all the evidences of a vast population are exhibited. Industry is in the lowest possible condition—the nobles and clergy possessing nearly the whole country.”

“On a survey of the German empire, including the Austrian states, Prussia,” etc., Mr. Alison remarks, with the authority of Russel, Reisbeck, etc., “the vast and varied picture of Germany, presents the most interesting subject for reflection. In some districts, it exhibits poverty and suffering in the midst of the greatest abundance of natural riches; in others, plenty and prosperity under natural disadvantages; indigence is seen pervading a scanty, comfortless and numerous population. How little is public happiness dependent upon the gifts of nature?”

Ireland, which has so long received the commiseration of humanity, and stood out as a problem in history and political economy,

* Alison, i., 408.

with a genial climate, and a soil so prolific as to require scarcely an effort from the husbandman, and under a government, which, even in its worst manifestation, is vastly superior to that of many other nations, presents still its dark and gloomy picture of hopeless suffering: a whole nation beggared and famishing for food, extending its arms to all the world for relief! How shall her destiny be determined? For almost a third of a century, one-half of the time of Parliament has been occupied in measures for her relief, yet has she sunk lower and still lower. The returns of the commissioners in 1840, show two millions of persons dependent upon parochial relief, or about one-third of the whole population! So extraordinary a state of things was, perhaps, never heard of in history before. In all their squalid misery, this people have gone on increasing, with the sole occupation of multiplying their species. In ninety years, up to 1840, according to Wakefield, the population had increased four-fold! this, too, in a country without any manufactures, with the most contracted commerce and the most degraded agriculture. In the same period, she had sent a million and a half of emigrants to England, and probably as many to other portions of the world. Without any very considerable towns, the proportion of population to surface may be regarded the densest in Europe. Content with the lowest possible state of subsistence, which, in favorable seasons, is yielded without an effort, and a low standard of comfort, the Irish have all the stimulants, and are without any of the restraints of population.

In Great Britain, though every element of unlimited prosperity has been at work for so long a period, a diseased action of population is pointed out and commented upon by Mr. Alison. The indigence in the highland districts and great towns of Scotland, the consumption of spirits in the mercantile communities and increase of crime, the disorders and miseries of the manufacturing regions, the increase of crime in the country, female profligacy and intoxication, are stated by him as causes of evil of peculiar power and malignity, to which, if not restrained in their operation, the empire itself will, in the course of time, fall a victim. The increase of population has been from 10,942,000 souls in 1801, to 16,539,000 in 1831, 20,000,000 in 1840—having doubled in forty years, and this, too, by a natural process, all increase by immigration, except from Ireland (and this is not estimated higher than one and a half millions), in the same time being precluded. The wealth, power and influence of Great Britain are acknowledged throughout the world.

Having thus made a hurried survey of the various nations of the earth, and delayed the attention of our readers too long, we return to the United States, the peculiar subject of this paper, and proceed to trace the progress

of its population from the earliest period of history to the very present day.

It is computed by Tocqueville, that since the first important emigration of British settlers to America, in 1640, to the present time, the population has gone on, constantly doubling in every twenty-three and a half years. Its average *westward* progress now, has been estimated at seventeen miles per annum! In the basin of the Mississippi, population has, in forty years, multiplied *thirty-one fold*, and up to this period, perhaps fifty fold! "There is something solemn, and almost awful," says Alison, "in the incessant advance of the great stream of civilization, which, in America, is continually rolling down from the summit of the Alleghany mountains, and overspreading the boundless forests of the far West. Nothing similar was witnessed in the world before. Vast as were the savage multitudes, which ambition or the lust of plunder, under Ghengis Khan or Timour, brought down from the plains of Tartary to overwhelm the opulent regions of the earth, they are nothing compared to the ceaseless flood of human beings which is now, in its turn, sent forth from the abodes of civilized man into the desert parts of the world. Not less than 300,000 persons, almost in the prime of life, now yearly cross the Alleghany mountains, and settle on the banks of the Ohio and its tributary streams. They do not pass through like a devastating fire or a raging torrent—they settle where they take up their abode, never to return. Then, war is with the forest and the marsh: spreading themselves over an extent nearly 12,000 miles in length, these advance posts of civilization commence the incessant war with the plow and the hatchet—and, at the sound of their stroke, resounding through the solitudes of the forest, the wild animals and the Indians retire to more undisturbed retreats."

Various methods have at different times been adopted for ascertaining the population of a country. The number of houses were multiplied by 4, 5, 5.6 and 6; the number of births by 42, 35, 28, etc., according to different opinions. The ratio of deaths to population was also adopted as a method; but it is evident, as Dr. Franklin held, that these rules are not applicable alike to town and country, or different parts of the same country, were they even otherwise unobjectionable. An actual enumeration is the only reliable method, and the United States, by its decennial censuses, provided for in the constitution, was the first nation to adopt it as a fixed rule. It is said, indeed, that Henry VIII. had a census taken of the inhabitants of his kingdom, their ages, professions, wealth, etc., and that a similar census, sometime in the eighteenth century, was taken in Spain, classifying the inhabitants according to occupations, etc. The American plan has been adopted in England.*

* Seybert's Statistical Annals, p. 17.

At the close of the first hundred years after the earliest permanent English settlement in America, and when all the original states, except Georgia, had been founded, the whole population in the country was estimated only at 262,000. It is impossible to say what proportion of these were the natural increase, what supplied by emigration,* and how nearly correct is the whole estimate. The population was thus distributed:

POPULATION UNITED STATES, 1700.

Massachusetts.....	70,000
Connecticut.....	30,000
Rhode Island.....	10,000
New-Hampshire.....	10,000
New-York.....	30,000
New-Jersey.....	15,000
Pennsylvania.....	20,000
Maryland.....	25,000
Virginia.....	40,000
North Carolina.....	5,000
South Carolina.....	7,000

Thus is Massachusetts at the head of the colonies in population, Virginia superior to New-York, New-York and Connecticut of equal power, and Carolina occupying the tenth position in regard to mere numbers.

In the middle of this century we have another conjectural estimate from various data, which shows a population of about one million in the thirteen colonies—a four-fold increase in fifty years.

POPULATION, 1750.

New-Hampshire.....	30,000
Massachusetts.....	200,000
Rhode Island.....	35,000
Connecticut.....	80,000
New-York.....	90,000
New-Jersey.....	50,000
Pennsylvania†.....	150,000
Maryland.....	85,000
Virginia.....	90,000
North Carolina.....	35,000
South Carolina.....	30,000
Georgia‡.....	6,000

Thus again, after fifty years, we find Massachusetts at the head; but Pennsylvania, from the sixth, now occupies the second rank; New-York vies with Virginia, and Georgia is in its infancy. The relative importance of these colonies, however, was far otherwise, if we judge from the proportion of members to the grand council proposed by the convention of colonies at Albany in 1754, by which the Carolinas were placed in the

first rank, being entitled to the highest number; Massachusetts and Virginia were on common footing; Pennsylvania in the third rank.

In 1775, when Congress was desirous of apportioning the continental money among the states to be redeemed by them, the number of population ascertained was 2,243,000—an increase of over one hundred per cent. in twenty-five years, despite of the troubles of the times, which could not but have checked immigration and promoted emigration.

POPULATION, 1775.

New-Hampshire.....	102,000
Massachusetts.....	352,000
Rhode Island.....	58,000
Connecticut.....	262,000
Georgia.....	27,000
New-York.....	238,000
New-Jersey.....	138,000
Pennsylvania.....	341,000
Delaware.....	37,000
Maryland.....	174,000
Virginia.....	300,000
North Carolina.....	181,000
South Carolina.....	93,000

The estimated slave population of the South was then about 500,000, swelling the whole to 2,750,000. In the two previous estimates the slave population were not included, though it is doubtful about the first. Pennsylvania thus treads closely upon Massachusetts; Virginia has passed New-York; North Carolina and Georgia have made the most rapid strides, increasing about five-fold. In the previous period, the former state had increased seven-fold, and South Carolina near five-fold.

The first enumeration under the Constitution of the United States was made in 1790. It entered into but few particulars, separating the whole population into three classes: "free whites," "slaves," "other persons," meaning free colored persons. In regard only to the whites were there any subordinate heads, and these were only "male," "female," and the "males under or above sixteen years." This last distinction was intended to show the proportion of *productive* and *unproductive* population. The census disappointed public expectation, and, if correct, which is most likely, evinces a lower population at the Revolution than was supposed. §

POPULATION UNITED STATES, 1ST AUGUST, 1790.

States	Free white males of 16 years and up- ward, including heads of families	Free white males under sixteen years	Free white females including heads of families	All other free persons	Slaves	Total No.
Maine.....	24,384	24,748	46,870	538	—	96,540
New-Hampshire.....	36,089	34,851	70,171	630	158	141,899
Massachusetts.....	95,383	87,289	190,582	5,463	—	378,717
Rhode Island.....	16,033	15,811	32,855	3,469	952	69,110
Connecticut.....	60,527	54,492	117,562	2,801	2,759	238,141
Vermont.....	22,419	22,327	40,298	255	17	85,416
New-York.....	83,700	78,122	152,320	4,654	21,324	340,120

* Holmes' Annals, VI., p. 54; Pitkin's Statistics, 582.

† Including Delaware.

‡ Virginia, in this and the last case, is certainly put too low; and Connecticut, by actual returns, five years after showed 126,975 whites.

§ Tucker's Progress of Population in the United States.

POPULATION UNITED STATES—continued.

States	Free white males of sixteen years and upward, including heads of families	Free white males under sixteen years	Free white females including heads of families	All other free persons	Slaves	Total No.
New-Jersey	45,251	41,416	83,287	2,762	11,423	184,139
Pennsylvania	110,788	106,948	206,363	6,537	3,737	434,373
Delaware	11,783	12,143	22,384	3,899	8,687	59,096
Maryland	55,915	51,339	101,395	8,043	103,036	319,728
Virginia	110,934	116,135	215,046	12,766	293,427	748,308
North Carolina	69,988	77,506	140,710	4,975	100,572	393,751
South Carolina	35,576	37,722	66,880	1,801	107,094	249,073
Georgia	13,103	14,044	25,739	398	29,264	82,548
Kentucky	15,154	17,057	28,922	114	11,830	73,077
Tennessee	6,271	10,377	15,365	361	3,417	35,791
Total	813,298	802,327	1,556,839	59,466	697,897	3,929,827

Thus, eighty per cent. of the whole population were white, one and a half per cent. free colored, and nearly eighteen per cent. slaves—an increase in fifteen years of nearly forty per cent. in the slave population, and seventy-five in the white. Virginia has now very nearly double the population of any other state—Pennsylvania occupies the second rank—Massachusetts, from the first, has become the fourth. Three new states, Vermont, Kentucky, and Tennessee, have, combined, a population equal to New-Jersey.

The proportion of white males to females

was 103 to 100; of males over sixteen to those under as 50.3 to 49.7, or very nearly as 1 to 1—a result corresponding to that of England, where twenty years was assumed instead of sixteen.* We shall, hereafter, make some remarks upon these facts.

We now take another point, the census of 1800. This, following the previous division of white, colored and slave, distinguishes more particulars in regard to the first class, who are divided, both male and female, into numerous classes:

POPULATION, 1ST AUGUST, 1800.

Free White Males

States	Under ten years of age	Of ten years, and under sixteen	Of sixteen and under twenty- six, including heads of families	Of twenty-six and under forty-five, including heads of families	Of forty-five and upward, including heads of families
Maine	27,670	12,305	12,900	15,318	8,339
New-Hampshire	30,594	14,881	16,379	17,589	11,715
Massachusetts	63,646	32,498	38,305	39,729	31,316
Rhode Island	9,945	5,352	5,889	5,785	4,687
Connecticut	37,946	19,408	21,683	23,180	18,976
Vermont	29,420	12,046	13,242	16,544	8,076
New-York	100,367	54,273	49,275	61,594	31,943
New-Jersey	34,780	15,859	16,301	19,956	12,629
Pennsylvania	103,226	46,161	54,262	59,333	38,485
Delaware	8,250	4,437	5,121	5,012	2,213
Maryland	35,852	17,392	21,234	22,778	13,394
District of Columbia	1,588	671	1,178	1,332	539
Virginia	92,438	40,500	48,708	50,262	30,221
North Carolina	63,118	27,073	31,560	31,209	18,688
South Carolina	37,411	16,156	17,761	19,344	10,244
Georgia	19,841	8,470	9,787	10,325	4,957
Kentucky	37,274	14,045	15,705	17,699	9,233
Tennessee	19,227	7,194	8,282	8,352	4,125
Ohio	9,362	3,647	4,636	4,833	1,955
Indiana	854	347	466	645	262
Mississippi	1,009	356	482	780	290
Total	764,118	353,071	393,156	431,589	262,487

Free White Females

States	Under ten years of age	Of ten years, and under sixteen	Of sixteen and under twenty- six, including heads of families	Of twenty-six and under forty-five, including heads of families	Of forty-five and upward, including heads of families
Maine	26,899	11,338	13,295	14,496	8,041
New-Hampshire	29,871	14,193	17,153	18,381	12,142
Massachusetts	60,920	30,674	40,491	43,833	35,381
Rhode Island	9,524	5,026	6,463	6,919	5,647
Connecticut	35,736	18,218	23,561	25,186	20,827
Vermont	28,272	11,366	12,606	15,287	7,049
New-York	65,473	39,876	48,176	56,411	28,651
New-Jersey	32,622	14,827	17,018	19,533	11,600
Pennsylvania	99,624	43,789	53,974	53,846	33,394
Delaware	7,628	4,277	5,543	4,981	2,390
Maryland	33,796	16,437	22,367	21,170	11,906
District of Columbia	1,577	663	1,027	1,028	463

* Tucker.

POPULATION UNITED STATES—continued.

States	Free White Females				
	Under ten years of age	Of ten years and under sixteen	Of sixteen and under twenty-six, including heads of families	Of twenty-six and under forty-five, including heads of families	Of forty-five and upward, including heads of families
Virginia.....	87,323	38,835	50,730	47,810	27,453
North Carolina.....	59,074	25,874	32,989	30,665	17,514
South Carolina.....	34,664	15,857	18,145	17,236	9,437
Georgia.....	18,407	7,914	9,248	8,835	3,894
Kentucky.....	34,949	13,433	15,524	14,934	7,075
Tennessee.....	18,450	7,042	8,554	6,992	3,491
Ohio.....	8,644	3,353	3,661	3,342	1,395
Indiana.....	791	280	424	393	115
Mississippi.....	953	376	352	416	165
Total.....	715,197	323,648	401,490	411,694	248,030

States	All other free persons, except Indians, not taxed	Slaves	Total Population
Maine.....	818		151,719
New-Hampshire.....	856	8	183,762
Massachusetts.....	6,452		423,245
Rhode Island.....	3,304	381	69,122
Connecticut.....	5,330	951	251,002
Vermont.....	557		154,465
New-York.....	10,374	20,343	586,756
New-Jersey.....	4,402	12,422	211,949
Pennsylvania.....	14,561	1,706	602,365
Delaware.....	8,268	6,153	64,273
Maryland.....	19,587	105,635	341,518
District of Columbia.....	783	3,244	14,093
Virginia.....	20,124	345,796	880,200
North Carolina.....	7,043	133,296	478,103
South Carolina.....	3,185	146,151	345,591
Georgia.....	1,019	59,404	162,101
Kentucky.....	741	40,343	220,955
Tennessee.....	309	13,584	105,602
Ohio.....	337		45,365
Indiana.....	163	135	4,875
Mississippi.....	162	3,480	8,550
Total.....	108,395	893,041	5,305,941

Thus, in a period of ten years, having something definite to go upon, we find an increase of thirty-five per cent. in the total population—the whites having gained thirty-five and sixty-eight hundredths per cent.; colored eighty-two, slaves twenty-eight, whole colored thirty-two per cent. As compared with 1790, the whites and free colored have proportionably increased and slaves diminished; but all of this we shall see fully in another place. The proportion of white males to females was 100 to 95.3, though the females between sixteen and twenty-six exceed the males, and in New-England are very numerous at every age, owing to emigration.

Thus, at the opening of the nineteenth century, New-York has taken a rapid stride toward Virginia, which still remains first, though followed close by Pennsylvania; Georgia and Vermont have doubled; Tennessee and Kentucky trebled; Ohio, Indiana, and Mississippi, are in the family of states, and have a population nearly equal to that of Delaware. Emigration has been from the old to the new states.*

We come now to the third period. The census of 1810 adopted the same formula as that of 1800. Since the previous enumeration, 80,000 foreigners have become citizens by the annexation of Louisiana.

POPULATION OF THE UNITED STATES, 1810.

States	Free White Males			
	Under ten years of age	Of ten years and under sixteen	Of sixteen and under twenty-six, including heads of families	Of twenty-six and under forty-five, including heads of families
Maine.....	41,273	18,463	20,403	22,079
New-Hampshire.....	34,084	17,840	18,665	20,531
Massachusetts.....	68,930	34,964	45,018	45,854
Rhode Island.....	10,735	5,554	7,250	6,765
Connecticut.....	37,812	20,498	23,880	23,699
Vermont.....	38,062	18,347	19,678	20,441
New-York.....	165,933	73,702	85,779	94,882

* Tucker.

POPULATION OF THE UNITED STATES, 1810—continued.

Free White Males

States	Under ten years of age	Of ten years & under sixteen	Of sixteen and under twenty-six including heads of families	Of twenty-six and under forty-five, including heads of families	Of forty-five and upward, including heads of families
New-Jersey.....	37,814	18,014	21,232	21,394	16,004
Pennsylvania.....	138,464	62,506	74,203	74,193	52,100
Delaware.....	9,632	4,480	5,150	5,866	2,878
Maryland.....	38,613	18,489	22,688	25,255	15,165
District of Columbia.....	2,479	1,158	1,520	2,107	866
Virginia.....	97,777	42,919	51,473	52,567	35,302
North Carolina.....	68,036	30,321	34,630	34,456	21,189
South Carolina.....	39,669	17,193	20,933	20,488	11,304
Georgia.....	28,002	11,951	14,085	14,372	7,435
Kentucky.....	65,134	26,804	29,772	29,553	17,542
Tennessee.....	44,494	17,170	19,486	19,957	10,656
Ohio.....	46,623	18,119	20,189	22,761	11,965
Indiana.....	4,923	1,922	2,284	2,316	1,125
Mississippi.....	4,217	1,637	2,692	3,160	1,144
Illinois.....	2,266	945	1,274	1,339	556
Louisiana.....	5,848	2,491	2,963	5,130	2,508
Missouri.....	3,438	1,345	1,568	2,069	967
Alabama.....					
Michigan.....	800	351	583	763	340
Arkansas.....					
Total.....	1,035,058	468,083	547,597	571,997	364,836

Free White Females

Maine.....	39,131	17,827	21,290	21,464	12,515
New-Hampshire.....	32,313	17,259	20,792	22,040	15,204
Massachusetts.....	66,881	33,191	46,866	49,229	39,894
Rhode Island.....	10,555	5,389	7,520	7,635	6,372
Connecticut.....	35,913	18,931	20,073	26,293	22,696
Vermont.....	36,613	17,339	21,181	20,792	11,457
New-York.....	157,945	68,811	85,139	85,805	46,718
New-Jersey.....	36,065	17,787	21,184	21,359	15,109
Pennsylvania.....	131,789	60,943	75,960	70,826	45,840
Delaware.....	9,041	4,370	5,541	5,527	2,876
Maryland.....	36,137	17,833	23,875	22,908	14,154
District of Columbia.....	2,538	1,192	1,653	1,734	832
Virginia.....	90,715	42,207	54,899	51,163	32,512
North Carolina.....	65,421	30,053	37,933	33,944	20,427
South Carolina.....	37,497	16,629	20,583	18,974	10,926
Georgia.....	26,283	11,237	13,401	12,350	6,238
Kentucky.....	60,776	25,743	29,511	25,920	13,482
Tennessee.....	41,810	16,329	19,664	17,624	8,485
Ohio.....	44,192	16,869	19,990	19,436	8,717
Indiana.....	4,555	1,863	2,228	1,880	794
Mississippi.....	4,015	1,544	2,187	1,753	675
Illinois.....	2,019	791	1,053	894	364
Louisiana.....	5,384	2,588	2,874	3,026	1,499
Missouri.....	3,213	1,265	1,431	1,369	562
Alabama.....					
Michigan.....	640	332	368	311	130
Arkansas.....					
Total.....	981,421	448,322	561,956	544,256	338,478

All other persons, except Indians, not taxed

Slaves

Total Number

Maine.....	969		228,705
New-Hampshire.....	970		214,360
Massachusetts.....	6,737		472,040
Rhode Island.....	3,609	108	77,031
Connecticut.....	6,453	310	262,012
Vermont.....	750		217,713
New-York.....	25,333	15,017	959,049
New-Jersey.....	7,843	10,851	245,555
Pennsylvania.....	22,492	795	810,091
Delaware.....	13,136	4,177	72,674
Maryland.....	33,927	111,502	380,546
District of Columbia.....	2,549	5,395	24,023
Virginia.....	30,570	392,518	974,622
North Carolina.....	10,266	168,824	555,500
South Carolina.....	4,554	196,365	415,115
Georgia.....	1,801	105,218	252,433
Kentucky.....	1,713	80,561	406,511
Tennessee.....	1,317	41,535	261,727
Ohio.....	1,899		230,760
Indiana.....	393	237	24,520
Mississippi.....	240	17,088	40,352
Illinois.....	613	168	12,282

POPULATION OF THE UNITED STATES, 1810—continued.

	All other free persons, except Indians not taxed	Slaves	Total number
Louisiana.....	7,585	34,660	76,556
Missouri.....	607	3,011	20,845
Alabama.....			
Michigan.....	120	24	4,762
Arkansas.....			
Total.....	186,446	1,191,364	7,239,814

As before, we mark the increase, which is, for the whole population, 36·45 per cent.; for the whites, 36·18; colored, free, 7·2; slaves, 33·40; whole colored, 37·53. The whole free have gained again upon the slave population. The whole colored, in like manner, have gained upon the whites. The male population to female population, is as 100 to 96, though, as before, the number of females between sixteen and twenty-six is the largest. We shall refer to all these points hereafter.

New-York, since the census of 1800, has swept ahead of Pennsylvania and become a

match for Virginia. South Carolina is now the sixth in rank. Mississippi, Ohio and Indiana, have increased, respectively, four, five and sixfold; Kentucky and Tennessee about fourfold. Illinois, Louisiana, Missouri and Michigan, taken together, have about half the population of New-Hampshire.

In 1820, a more particular enumeration of slaves and colored persons was made, as to both ages and sex. A new column, for white males between sixteen and eighteen, was added.

POPULATION OF THE UNITED STATES, AUGUST 1, 1820.

States	Free White Males					
	Under ten years of age	Of ten years and under sixteen	Between six- teen and eighteen	Of sixteen and under twenty- six, including heads of families	Of twenty-six and under forty-five, including heads of families	Of forty-five and upward, including heads of families
Maine	49,217	24,528	7,146	28,530	27,742	19,178
New-Hampshire	35,466	19,672	5,529	22,703	22,956	18,413
Massachusetts	70,993	38,573	10,912	49,506	54,414	38,668
Rhode Island	11,530	5,860	1,767	7,596	6,618	5,888
Connecticut	36,848	20,682	6,284	25,731	25,632	21,814
Vermont	35,708	19,241	5,860	24,137	22,035	16,189
New-York	222,608	104,297	29,598	132,733	138,634	81,259
New-Jersey	42,055	19,970	5,956	24,639	24,418	18,537
Pennsylvania	175,381	77,050	25,901	102,550	97,144	64,493
Delaware	9,071	4,448	1,719	5,516	5,607	3,263
Maryland	41,511	18,952	6,261	26,404	27,916	16,960
District of Columbia	3,276	1,540	550	2,171	2,893	1,291
Virginia	103,963	45,762	13,148	58,863	57,898	38,245
North Carolina	75,488	32,912	9,748	39,527	38,264	25,453
South Carolina	42,658	18,258	5,877	23,984	22,115	13,919
Georgia	35,444	14,743	4,215	19,483	17,874	10,860
Kentucky	83,050	36,004	10,383	41,328	38,178	25,136
Tennessee	67,746	28,497	7,472	31,028	27,549	18,780
Ohio	111,683	45,858	12,607	57,008	54,432	31,626
Indiana	29,629	11,454	3,270	14,428	14,072	7,066
Mississippi	8,104	3,216	1,052	4,560	5,110	2,296
Illinois	10,554	4,227	1,313	6,221	5,755	2,641
Louisiana	11,817	4,710	2,105	8,747	11,236	4,822
Missouri territory	10,677	4,256	1,301	6,537	6,622	2,909
Alabama territory	17,103	6,281	1,750	9,336	9,055	4,064
Michigan territory	1,220	559	152	1,334	1,661	609
Arkansas territory	2,420	985	329	1,427	1,453	686
Total	1,345,220	612,535	182,205	776,030	766,283	495,065

Free White Females

Maine.....	46,565	23,982	..	30,823	28,248	18,527
New-Hampshire.....	34,599	18,899	..	24,806	25,797	19,925
Massachusetts.....	69,260	38,308	..	52,805	57,721	46,171
Rhode Island.....	10,917	5,769	..	8,407	8,671	7,157
Connecticut.....	35,289	19,833	..	27,205	29,069	25,078
Vermont.....	35,327	18,577	..	24,713	23,683	15,236
New-York.....	216,513	101,904	..	132,492	129,899	72,385
New-Jersey.....	39,921	19,504	..	25,637	24,693	18,035
Pennsylvania.....	166,710	78,425	..	101,404	94,345	59,592
Delaware.....	8,657	4,311	..	5,573	5,537	3,299
Maryland.....	39,454	19,578	..	27,293	26,347	15,607
District of Columbia.....	3,319	1,640	..	2,518	2,615	1,351
Virginia.....	98,185	45,766	..	62,411	55,995	35,686
North Carolina.....	70,998	33,101	..	42,253	38,069	25,135
South Carolina.....	39,891	18,741	..	23,662	20,939	13,273

POPULATION OF THE UNITED STATES, AUGUST 1, 1820—continued.

Free White Females

States	Under ten years of age	Of ten years and under sixteen	Between sixteen and eighteen	Of sixteen and under twenty-six, including heads of families	Of twenty-six and under forty-five, including heads of families	Of forty-five and upward, including heads of families
Georgia.....	33,177	14,937	..	18,642	15,365	9,041
Kentucky.....	77,641	35,120	..	41,905	35,483	20,799
Tennessee.....	63,419	27,770	..	31,569	27,931	15,638
Ohio.....	106,036	44,106	..	53,337	48,797	23,669
Indiana.....	27,684	10,707	..	13,635	12,009	5,074
Mississippi.....	7,220	3,176	..	3,791	3,107	1,596
Illinois.....	9,558	4,018	..	4,842	4,166	1,803
Louisiana.....	11,062	5,484	..	6,708	5,695	3,102
Missouri territory.....	9,766	3,978	..	5,076	4,265	1,902
Alabama territory.....	15,810	6,269	..	7,993	6,625	2,895
Michigan territory.....	1,130	525	..	692	595	266
Arkansas territory.....	2,142	927	..	1,179	934	426
Total.....	1,280,570	605,375	..	781,371	736,600	462,888

Male Slaves

	Under fourteen	Of fourteen and under twenty-six	Of twenty-six and under forty-five	Of forty-five and upward
Maine.....	..	..	..	..
New-Hampshire.....	..	..	..	..
Massachusetts.....	..	..	..	..
Rhode Island.....	2	1	1	14
Connecticut.....	..	..	13	24
Vermont.....	..	..	..	..
New-York.....	1,861	1,624	932	671
New-Jersey.....	860	1,583	917	628
Pennsylvania.....	1	1	18	65
Delaware.....	1,244	839	337	135
Maryland.....	24,736	14,846	10,718	6,073
District of Columbia.....	1,245	775	671	316
Virginia.....	96,881	52,791	45,438	23,164
North Carolina.....	48,914	27,511	19,395	10,731
South Carolina.....	51,738	32,324	31,641	14,769
Georgia.....	33,204	19,541	16,249	6,922
Kentucky.....	31,469	17,132	10,944	4,369
Tennessee.....	20,314	10,078	6,529	2,826
Ohio.....	..	..	..	..
Indiana.....	43	37	11	7
Mississippi.....	7,016	4,600	4,061	1,173
Illinois.....	170	179	133	66
Louisiana.....	11,675	10,876	10,520	3,495
Missouri territory.....	2,491	1,511	852	487
Alabama territory.....	9,665	6,563	4,200	1,352
Michigan.....	..	..	..	..
Arkansas territory.....	323	276	143	78
Total.....	343,852	203,088	163,723	77,365

Female Slaves

Free Colored Males

	Under fourteen	Of fourteen and under twenty-six	Of twenty-six and under forty-five	Of forty-five and upward	Under fourteen	Of fourteen and under twenty-six	Of twenty-six and under forty-five	Of forty-five and upward
Maine.....	..	..	..	..	170	86	91	90
New-Hampshire.....	..	..	..	..	97	101	85	89
Massachusetts.....	..	..	..	..	1,065	680	896	647
Rhode Island.....	2	3	3	22	577	368	343	279
Connecticut.....	..	..	13	47	1,432	911	865	629
Vermont.....	..	..	..	..	152	113	93	80
New-York.....	1,544	1,579	1,065	812	5,197	3,011	3,347	1,903
New-Jersey.....	592	1,285	1,036	656	3,328	1,116	1,090	882
Pennsylvania.....	3	2	36	85	5,666	3,348	3,890	1,900
Delaware.....	979	611	233	131	2,812	1,317	1,207	1,143
Maryland.....	22,740	13,403	9,362	5,520	7,629	3,593	3,756	3,568
District of Columbia.....	1,311	990	696	373	756	338	349	288
Virginia.....	92,468	51,972	40,691	21,748	8,145	3,884	3,135	2,685
North Carolina.....	45,055	25,663	18,326	9,422	3,415	1,728	1,109	1,143
South Carolina.....	49,694	33,991	30,461	13,857	1,376	732	647	541
Georgia.....	32,141	19,879	15,631	6,089	330	195	180	146
Kentucky.....	29,231	17,407	11,801	4,379	585	281	284	243
Tennessee.....	19,251	11,153	7,192	2,764	700	323	240	238
Ohio.....	..	..	..	..	1,057	544	538	315
Indiana.....	40	21	21	10	275	146	141	92
Mississippi.....	6,677	4,807	3,506	974	87	62	52	38
Illinois.....	139	128	71	31	66	71	55	25

POPULATION OF THE UNITED STATES, AUGUST 1, 1820—continued.

States	Female Slaves				Free Colored Males			
	Under fourteen	Of fourteen and under twenty-six	Of twenty-six and under forty-five	Of forty-five and upward	Under fourteen	Of fourteen and under twenty-six	Of twenty-six and under forty-five	Of forty-five and upward
Louisiana.....	10,763	11,672	7,758	2,305	2,248	876	915	470
Missouri.....	2,281	1,461	855	284	93	40	36	17
Alabama.....	9,140	6,141	3,779	1,039	118	83	68	49
Michigan.....					35	32	27	11
Arkansas.....	293	268	157	79	18	13	11	2
Total.....	324,344	202,336	152,693	70,637	47,659	24,012	23,450	17,613

States	Free Colored Females				All other free persons, except Indians, not taxed		Total
	Under fourteen	Of fourteen and under twenty-six	Of twenty-six and under forty-five	Of forty-five and upward			
Maine.....	168	115	126	83	66		298,335
New-Hampshire.....	109	99	106	100	139		244,161
Massachusetts.....	969	778	904	781	128		523,287
Rhode Island.....	550	523	465	429	44		83,059
Connecticut.....	1,421	961	950	675	100		275,202
Vermont.....	170	125	97	73	15		235,764
New-York.....	5,342	4,195	4,126	2,158	701		1,372,812
New-Jersey.....	3,093	1,198	987	766	149		277,575
Pennsylvania.....	5,465	4,063	4,073	1,797	1,951		1,049,458
Delaware.....	2,742	1,379	1,307	1,051			72,749
Maryland.....	7,857	4,461	4,752	3,914			407,350
District of Columbia.....	828	549	548	392			33,039
Virginia.....	7,640	4,545	3,772	3,083	250		1,065,379
North Carolina.....	3,129	1,737	1,345	1,006			638,829
South Carolina.....	1,223	836	800	671			502,741
Georgia.....	349	209	195	159	4		340,987
Kentucky.....	488	254	244	280	182		564,317
Tennessee.....	532	297	224	173	52		422,813
Ohio.....	994	549	466	260	139		581,434
Indiana.....	251	137	120	68			147,178
Mississippi.....	84	52	44	39			75,448
Illinois.....	104	50	44	22	49		55,211
Louisiana.....	2,203	1,557	1,377	824	484		153,407
Missouri.....	62	39	34	26	29		66,566
Alabama.....	91	69	58	35			127,901
Michigan.....	20	20	16	13	131		8,896
Arkansas.....	8	3	1	3	18		14,273
Total.....	45,898	28,850	27,181	18,561	4,632		9,638,191

The increase in the whole population has been 33·35 per cent.; for the whites, 34·3; for the whole colored, 29·33; free colored, 27·75; slaves, 29·57. The perceptible decline in the *ratio* of increase is attributed, in part, to the decrease of immigration during the war, and the escape of slaves to the enemy. Such a decline in the *ratio* of *natural* increase may also be expected in the progress of every country. It is more striking in this case, from the fact, that the previous ratio was swelled by the Louisiana purchase.

In ten years, the whites have gained upon the colored and slaves. The proportion of males and females, among the whites, does not greatly vary. The colored females are to the colored males, as 107 to 100. The

number of whites under ten is one-third. Those under 16 years, as compared with those over that age, have diminished.

In the same period, New-York has taken the lead by far, and is greater, by one-third, than either Virginia or Pennsylvania. Ohio has become the fifth state, and shoots ahead of Massachusetts, as also does Kentucky. Alabama and Arkansas are introduced.

The census of 1830 was far more minute than any of the preceding. It changed the time of enumeration to the first of June, thus cutting off two months from the decennial period. The number of divisions, of every class of population, is also greatly enlarged. Blanks for idiots, deaf, dumb and blind, are added.

POPULATION OF THE UNITED STATES, JUNE 1, 1830.

State	Free White Males.					
	Under five	Five and under ten	Ten and under fifteen	Fifteen and under twenty	Twenty and under thirty	Thirty and under forty
Maine.....	34,053	28,742	25,522	22,400	34,895	21,701
New-Hampshire.....	19,428	17,521	16,737	14,847	21,191	14,696
Massachusetts.....	40,644	35,988	34,679	32,801	58,621	35,433
Rhode Island.....	6,733	5,786	5,400	5,354	8,425	5,379
Connecticut.....	19,033	17,891	17,788	16,509	26,166	16,608
Vermont.....	21,700	19,406	17,597	15,782	24,207	15,773
New-York.....	158,077	137,071	118,523	101,712	176,754	113,136

POPULATION OF THE UNITED STATES, JUNE 1, 1830—continued.

States	Free White Males					
	Under five	Five and under ten	Ten and under fifteen	Fifteen and under twenty	Twenty and under thirty	Thirty and under forty
New-Jersey	25,071	21,204	19,745	17,123	27,001	17,231
Pennsylvania	117,853	96,199	82,375	73,113	121,359	75,172
Delaware	4,744	4,099	3,919	4,184	5,508	3,206
Maryland	23,737	19,438	17,866	15,778	29,397	18,215
Virginia	65,793	51,805	43,287	36,947	60,911	36,539
North Carolina	46,749	35,950	30,527	25,452	39,428	23,042
South Carolina	25,132	20,259	16,437	13,961	22,164	13,969
Georgia	33,027	23,709	15,584	15,186	26,844	16,156
Alabama	22,764	15,482	12,129	9,509	17,440	11,399
Mississippi	7,918	5,572	4,591	3,623	7,237	4,632
Louisiana	7,968	6,402	5,134	4,325	10,458	7,777
Tennessee	59,576	45,366	36,044	29,247	44,982	25,111
Kentucky	54,116	41,073	34,222	29,017	45,913	26,289
Ohio	96,411	74,690	62,151	51,138	81,290	49,346
Indiana	39,780	28,692	22,872	17,653	28,153	17,904
Illinois	18,834	12,753	10,024	7,770	14,706	8,825
Missouri	13,531	9,617	7,469	5,639	11,147	7,084
Michigan territory	3,023	2,326	1,905	1,543	4,389	2,739
Arkansas territory	3,020	2,021	1,626	1,272	2,835	1,820
Florida territory	1,932	1,333	1,015	789	2,171	1,536
Dist. of Columbia	2,333	1,680	1,486	1,522	2,805	1,817
Total	972,980	782,075	669,734	573,196	956,487	592,535

States	Free White Females.					
	Under five	Five and under ten	Ten and under fifteen	Fifteen and under twenty	Twenty and under thirty	Thirty and under forty
Maine	32,471	27,076	24,067	22,348	35,596	22,259
New-Hampshire	18,538	16,790	15,525	14,623	24,564	16,690
Massachusetts	39,533	34,537	33,326	34,439	60,495	38,163
Rhode Island	6,623	5,642	5,213	5,584	9,203	5,756
Connecticut	18,270	16,943	16,575	15,978	26,540	17,937
Vermont	21,334	18,632	16,870	15,753	25,180	16,264
New-York	151,868	133,084	115,166	105,196	168,897	104,522
New-Jersey	23,937	20,479	18,267	16,784	25,817	16,623
Pennsylvania	111,947	92,719	80,087	75,976	115,698	69,604
Delaware	4,647	4,011	3,654	3,381	5,484	3,179
Maryland	22,356	18,693	17,327	18,020	27,248	16,617
Virginia	62,411	49,964	41,936	40,479	62,044	36,456
North Carolina	43,775	34,264	28,842	27,398	41,636	24,534
South Carolina	23,691	19,043	15,332	15,122	21,866	13,438
Georgia	30,958	22,590	17,988	16,452	24,036	13,974
Alabama	21,340	14,801	11,092	9,951	14,457	8,559
Mississippi	7,319	5,165	4,169	3,653	5,231	3,090
Louisiana	7,800	6,193	5,140	4,709	6,930	4,204
Tennessee	55,399	42,975	33,556	30,616	42,970	23,545
Kentucky	50,835	39,439	32,197	29,623	41,936	23,463
Ohio	89,873	71,851	59,306	52,635	75,574	43,894
Indiana	37,505	27,313	21,072	18,087	26,702	15,703
Illinois	17,429	12,000	9,246	8,053	12,461	6,850
Missouri	12,561	9,077	6,794	5,765	8,791	5,121
Michigan territory	2,743	2,066	1,686	1,438	2,540	1,399
Arkansas territory	2,782	1,897	1,494	1,225	2,012	1,087
Florida territory	1,807	1,251	981	923	1,447	848
Dist. of Columbia	2,182	1,646	1,648	1,843	2,856	1,752
Total	921,934	750,741	638,856	596,254	918,411	555,531

States	Free White Males					
	Forty and under fifty	Fifty and under sixty	Sixty and under seventy	Seventy and under eighty	Eighty and under ninety	Ninety and under one hundred
Maine	14,547	9,228	5,956	2,637	823	93
New-Hampshire	10,772	7,218	5,059	2,786	840	85
Massachusetts	23,683	15,008	10,319	5,575	1,760	173
Rhode Island	3,512	2,157	1,444	854	261	28
Connecticut	11,595	7,851	5,495	3,154	871	81
Vermont	10,405	8,051	5,203	2,203	618	48
New-York	68,871	40,503	23,909	10,034	2,561	255
New-Jersey	11,043	7,053	4,458	2,021	534	44
Pennsylvania	46,600	28,032	16,085	6,979	1,775	228
Delaware	2,036	1,286	609	202	43	9
Maryland	11,072	6,565	3,462	1,375	355	53
Virginia	23,381	15,261	8,971	3,674	1,108	184
North Carolina	14,998	10,536	5,968	2,489	649	138
South Carolina	8,334	5,644	3,042	1,210	298	66
Georgia	9,542	5,674	3,063	1,120	290	63
Alabama	6,029	3,593	1,741	591	147	19
Mississippi	2,419	1,595	632	189	47	11
Louisiana	4,304	2,023	896	317	78	24
Tennessee	15,105	11,188	5,543	2,107	657	105

POPULATION OF THE UNITED STATES, JUNE 1, 1830—continued.

States	Free White Males						
	Forty and under fifty	Fifty and under sixty	Sixty and under seventy	Seventy and under eighty	Eighty and under ninety	Ninety and under one hundred	One hundred and upward
Kentucky.....	15,966	10,843	6,253	2,585	699	119	28
Ohio.....	31,112	18,058	10,783	3,632	935	138	29
Indiana.....	10,306	6,004	3,160	1,059	240	49	13
Illinois.....	4,627	2,853	1,172	384	90	6	4
Missouri.....	3,642	1,939	927	334	60	14	2
Michigan territory.....	1,232	658	264	64	20	4	1
Arkansas territory.....	876	434	209	69	12	1	—
Florida territory.....	760	436	194	57	10	2	1
District of Columbia.....	1,068	593	245	71	25	1	1
Total.....	367,840	229,284	135,082	57,772	15,806	2,041	301

Free White Females.							
Maine.....	14,183	9,330	5,904	2,688	911	138	3
New-Hampshire.....	11,896	8,448	5,888	3,110	1,085	174	6
Massachusetts.....	26,684	18,456	12,989	7,173	2,528	347	4
Rhode Island.....	4,024	2,826	1,939	1,058	376	44	—
Connecticut.....	13,214	9,245	6,707	3,760	1,228	156	3
Vermont.....	11,034	7,152	4,727	2,086	652	87	4
New-York.....	64,315	38,344	22,589	9,645	2,673	304	17
New-Jersey.....	11,007	7,307	4,705	2,160	586	63	2
Pennsylvania.....	44,485	27,882	16,221	7,084	1,929	235	21
Delaware.....	2,047	1,397	630	263	56	6	1
Maryland.....	10,840	6,953	3,633	1,541	432	64	14
Virginia.....	23,750	15,447	8,765	3,847	1,098	188	28
North Carolina.....	16,428	10,601	5,980	2,496	747	158	30
South Carolina.....	8,468	5,455	2,929	1,181	351	80	17
Georgia.....	8,427	5,089	2,664	987	268	65	20
Alabama.....	4,695	2,731	1,319	432	144	29	10
Mississippi.....	1,739	983	436	149	34	7	2
Louisiana.....	2,319	1,257	660	222	73	17	1
Tennessee.....	15,264	9,279	4,541	1,855	542	110	28
Kentucky.....	15,476	9,499	5,315	2,195	575	97	14
Ohio.....	27,546	15,898	8,293	2,915	736	89	6
Indiana.....	9,028	4,808	2,275	780	212	25	4
Illinois.....	3,750	2,047	812	273	77	14	1
Missouri.....	2,718	1,499	766	227	60	9	2
Michigan territory.....	726	390	140	35	10	5	—
Arkansas territory.....	528	301	107	31	9	3	—
Florida territory.....	484	247	101	45	10	5	—
District of Columbia.....	980	603	272	98	32	4	—
Total.....	356,046	223,504	131,307	58,336	17,434	2,523	238

States	Free Colored Males					
	Under ten years	Ten and under twenty-four	Twenty-four and under thirty-six	Thirty-six and under fifty-five	Fifty-five and under one hundred	One hundred and upward
Maine.....	163	172	111	108	54	2
New-Hampshire.....	67	78	53	44	32	1
Massachusetts.....	806	887	718	629	314	4
Rhode Island.....	337	501	317	238	152	3
Connecticut.....	1,019	1,121	771	624	313	2
Vermont.....	121	116	78	60	48	3
New-York.....	5,643	6,094	3,860	4,492	1,358	19
New-Jersey.....	3,033	3,234	1,458	1,196	573	7
Pennsylvania.....	5,095	5,250	4,069	2,796	1,132	35
Delaware.....	2,627	2,259	1,303	1,180	503	10
Maryland.....	8,309	6,099	4,020	4,142	2,287	49
Virginia.....	8,236	6,126	3,546	2,721	1,731	27
North Carolina.....	3,438	2,955	1,400	1,062	685	21
South Carolina.....	1,314	958	622	424	335	19
Georgia.....	368	353	224	186	118	12
Alabama.....	275	202	187	124	56	—
Mississippi.....	81	82	59	43	22	1
Louisiana.....	2,503	2,296	1,208	828	384	11
Tennessee.....	842	583	361	321	216	7
Kentucky.....	764	584	410	484	402	8
Ohio.....	1,562	1,140	808	616	325	8
Indiana.....	617	544	307	240	138	11
Illinois.....	277	251	136	119	40	1
Missouri.....	87	76	43	57	18	3
Michigan territory.....	31	43	48	29	8	—
Arkansas territory.....	27	17	23	17	3	1
Florida territory.....	138	109	46	56	33	1
District of Columbia.....	895	649	464	405	229	3
Total.....	48,675	43,079	27,650	22,271	11,509	269

POPULATION OF THE UNITED STATES, JUNE 1, 1830—continued.

Free Colored Females

States	Under ten years	Ten and under twenty-four	Twenty-four and under thirty-six	Thirty-six and under fifty-five	Fifty-five and under one hundred	One hundred and upward
Maine.....	143	175	117	93	52	—
New-Hampshire.....	68	97	54	63	45	2
Massachusetts.....	812	967	815	661	396	39
Rhode Island.....	355	597	443	350	265	3
Connecticut.....	1,051	1,233	819	667	417	10
Vermont.....	121	131	73	71	57	2
New-York.....	5,509	6,843	5,504	3,780	1,714	54
New-Jersey.....	2,811	2,890	1,428	1,113	554	34
Pennsylvania.....	5,054	6,142	4,476	2,742	1,105	6
Delaware.....	2,524	2,359	1,446	1,102	526	16
Maryland.....	7,912	7,313	5,389	4,535	2,796	87
Virginia.....	8,002	7,031	4,501	3,379	2,024	24
North Carolina.....	3,287	3,118	1,649	1,179	720	29
South Carolina.....	1,378	1,175	746	545	399	6
Georgia.....	347	330	231	185	126	6
Alabama.....	245	209	131	84	56	3
Mississippi.....	72	51	45	49	14	—
Louisiana.....	2,640	2,727	1,927	1,402	755	29
Tennessee.....	772	616	359	285	187	6
Kentucky.....	633	505	351	398	369	9
Ohio.....	1,573	1,551	799	611	241	4
Indiana.....	594	573	279	215	107	4
Illinois.....	305	225	125	106	50	2
Missouri.....	77	62	46	63	34	3
Michigan territory.....	20	36	26	16	4	—
Arkansas territory.....	17	13	10	7	6	—
Florida territory.....	144	136	70	62	48	1
District of Columbia.....	863	1,033	682	564	358	7
Total.....	47,329	48,138	32,541	24,327	13,425	386

Male Slaves

Maine.....	..	..	..	..	..	..
New-Hampshire.....	..	..	..	..	..	..
Massachusetts.....	..	..	..	..	..	..
Rhode Island.....	..	2	..	..	1	..
Connecticut.....	1	2	..	1	4	..
Vermont.....	..	..	..	..	..	1
New-York.....	5	6	..	1	..	1
New-Jersey.....	5	12	395	383	261	3
Pennsylvania.....	23	102	25	11	10	1
Delaware.....	580	853	245	83	42	3
Maryland.....	17,880	17,759	8,846	6,135	2,772	50
Virginia.....	84,000	68,917	43,189	30,683	12,155	133
North Carolina.....	45,991	38,099	20,212	14,030	5,548	133
South Carolina.....	51,820	44,600	29,710	21,674	7,567	98
Georgia.....	38,367	34,253	19,440	12,818	3,847	92
Alabama.....	21,837	19,553	11,100	5,158	1,495	27
Mississippi.....	11,037	10,793	6,947	3,445	845	22
Louisiana.....	13,627	17,926	15,784	8,443	2,089	42
Tennessee.....	27,713	23,431	11,260	6,020	1,729	63
Kentucky.....	31,500	27,449	13,520	7,499	2,280	61
Ohio.....	..	1	..	..	..	..
Indiana.....	..	..	..	..	..	..
Illinois.....	98	118	76	47	6	2
Missouri.....	4,872	4,364	2,058	923	208	14
Michigan territory.....	2	7	11	1	1	..
Arkansas territory.....	845	814	395	192	47	..
Florida territory.....	2,501	2,462	1,830	948	224	..
District of Columbia.....	794	1,024	542	375	114	3
Total.....	353,498	312,567	185,585	118,680	41,545	748

Female Slaves.

States	Under ten years	Ten and under twenty-four	Twenty-four and under thirty-six	Thirty-six and under fifty-five	Fifty-five and under one hundred	One hundred and upward	Total Population
Maine.....	..	..	1	..	1	..	399,455
New-Hampshire.....	..	..	2	1	..	..	269,328
Massachusetts.....	..	..	..	..	1	..	610,408
Rhode Island.....	..	4	1	1	8	..	97,199
Connecticut.....	1	3	..	4	9	..	297,675
Vermont.....	..	..	..	..	..	..	280,652
New-York.....	23	12	17	3	6	1	1,913,006
New-Jersey.....	8	20	424	451	288	4	320,823
Pennsylvania.....	32	106	22	25	42	4	1,348,233
Delaware.....	508	617	230	80	49	2	76,748
Maryland.....	17,002	16,236	8,331	5,329	2,601	53	447,040

POPULATION OF THE UNITED STATES, JUNE 1, 1830—continued.

Female Slaves

States	Under ten years	Ten and under twenty-four	Twenty-four and under thirty-six	Thirty-six and under fifty-five	Fifty-five and under one hundred	One hundred and upward	Total population
Virginia	83,207	66,921	40,927	27,206	12,275	144	1,211,405
North Carolina	44,847	37,508	20,095	13,088	5,636	114	737,987
South Carolina	51,524	45,517	32,689	22,006	8,112	84	581,185
Georgia	38,102	33,917	20,527	12,325	3,765	78	516,823
Alabama	21,356	19,669	11,088	4,898	1,312	26	309,527
Mississippi	10,860	10,840	6,983	3,173	682	21	136,621
Louisiana	13,687	16,613	13,534	6,249	1,552	42	215,529
Tennessee	26,568	24,145	12,223	6,519	1,891	41	681,904
Kentucky	30,975	27,346	13,854	8,107	2,572	50	687,917
Ohio		2	3				937,903
Indiana		2		1			343,031
Illinois	144	128	61	52	12	3	157,445
Missouri	4,611	4,605	2,199	1,014	219	4	140,455
Michigan territory	1	3	3	3			31,639
Arkansas	803	836	399	193	51	1	30,388
Florida	2,560	2,449	1,561	768	177	1	34,730
Dist. of Columbia	816	1,270	612	391	176	2	39,834

Total 347,665 308,770 185,786 111,887 41,436 676 12,554,890
 Add for number of seamen in the United States service, aliens, &c., as per notes to fifth census 11,130

Grand total of the United States 12,866,020

White Persons
(included in the foregoing.)Slaves and Colored
(included in the foregoing.)

States	Who are deaf and dumb, under four-teen years of age.	Who are deaf and dumb, of the age of fourteen and under twenty-five.	Who are deaf and dumb, of the age of twenty-five and upward.	Who are blind.	Aliens—foreigners not naturalized.	Who are deaf and dumb, under four-teen years of age.	Who are deaf and dumb, of the age of fourteen and under twenty-five.	Who are deaf and dumb, of the age of twenty-five and upward.	Who are blind.
Maine	64	60	56	159	3,526	4		1	1
New-Hampshire	32	55	48	105	410	5	1	3	
Massachusetts	56	62	138	218	8,787	2	3	4	5
Rhode Island	6	22	28	56	1,100	2	2		8
Connecticut	43	152	99	188	1,481	4	2		7
Vermont	39	59	55	51	3,364	3		2	
New-York	277	310	255	642	52,188	17	14	12	82
New-Jersey	64	71	72	205	3,365	5	2	8	22
Pennsylvania	224	279	255	475	15,376	12	12	15	28
Delaware	6	15	14	18	313		5	4	11
Maryland	50	31	54	147	4,786	40	30	26	124
Virginia	132	118	169	355	789	51	41	38	438
North Carolina	70	81	79	223	202	31	27	25	161
South Carolina	60	52	62	102	486	9	27	33	136
Georgia	50	51	44	150	101	26	21	12	123
Alabama	45	25	19	68	65	9	7	7	48
Mississippi	12	10	7	25	72	2	8	2	31
Louisiana	15	15	19	36	1,713	7	5	9	77
Tennessee	59	59	54	176	119	13	9	6	37
Kentucky	100	113	90	169	173	16	25	5	83
Ohio	148	160	118	232	5,778	5		4	6
Indiana	49	59	33	85	279	1	2		2
Illinois	23	27	16	35	451				4
Missouri	12	5	10	27	155	2	1	5	10
Michigan territory	4	7	4	5	1,497				2
Arkansas territory	6	2	2	8	11	4			2
Florida territory	2	3	3	3	221	1	2	3	16
District of Columbia	4	5	3	11	724	2			8
Total	1,652	1,905	1,806	3,974	107,832	273	246	224	1,470

The increase in ten years, adding a correction for the two months ($\frac{1}{2}$ per cent.) is, whole population, 33.92 per cent; whites, 34.52; free colored, 34.85; slaves, 30.75; whole colored, 31.31. [Without this correction, the figures would have been 33.26, 33.85, 34.17, 30.15, 30.7.] The ratio of increase has therefore, in ten years, shown a slight enlargement. The whites have also gained over the colored. The proportion of the sexes continues nearly the same, though the female

slaves show an increase of three per cent. The white children under ten years, and the bearing women, have diminished in proportion, showing, as it is argued, a decline in the ratio of *natural* increase.

New-York has now assumed her empire position, and equals, in population, Massachusetts and Pennsylvania combined. Virginia has fallen considerably behind Pennsylvania. Ohio, Kentucky and Tennessee, continue their extraordinary advances.

TABLE I.
POPULATION OF THE UNITED STATES.—ANALYSIS CENSUS 1840.

In the preceding pages we have given a minute analysis of the census of 1790, 1800, 1810, 1820 and 1830. In order to complete the subject, we present the analysis of 1840 and 1850.

NAME OF STATE, &c.	FREE WHITE MALES IN U. S. 1840.										FREE COLORED MALES, 1840.									
	Under 5.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 30.	30 and under 40.	40 and under 50.	50 and under 60.	60 and under 70.	70 and under 80.	80 and under 90.	90 and under 100.	100 and upwards.	Under 10.	10 and under 24.	24 and under 36.	36 and under 55.	55 and under 100.	100 and upwards.	
Maine.....	40532	35671	31691	27740	42266	29864	19948	12551	7408	4152	1041	120	5	149	231	135	137	67	1	
New-Hampshire.....	18135	17300	10929	15693	22170	16781	12915	8690	5485	3447	1084	103	2	57	68	42	48	33	..	
Massachusetts.....	47313	40296	37971	37069	70285	52283	30161	19270	11432	6473	1914	195	17	908	1119	1444	871	306	6	
Rhode Island.....	7121	5947	5969	6798	9878	6798	4452	2799	1570	862	287	20	..	355	388	319	242	109	..	
Connecticut.....	19921	17420	16718	26697	23006	19056	13355	9121	5727	3381	1034	92	8	935	1165	710	746	331	4	
Vermont.....	19069	17551	16999	17596	23006	19056	13355	9121	5727	3381	1034	92	8	935	1165	710	746	331	4	
New-York.....	18730	158107	139752	130094	230981	158194	97542	54975	30869	14694	3984	84	13	91	99	74	60	38	2	
New-Jersey.....	28287	23809	21951	19308	31052	21523	13949	8596	4887	2459	660	67	7	6008	6370	5711	4921	1476	23	
Pennsylvania.....	149180	117351	101322	89825	152921	99421	64366	37933	20268	9224	2453	240	63	6245	6192	5182	3697	1400	36	
Delaware.....	4339	3357	3581	3104	5722	3549	2117	1270	682	268	61	5	4	7460	7272	4772	4670	2494	50	
Maryland.....	26921	20573	18351	16218	30028	20732	12926	7258	3899	1533	417	64	16	9460	7727	4772	4670	2494	50	
Virginia.....	69308	53485	45822	38263	63465	41141	27465	16670	9673	4458	1241	196	26	7958	7165	3898	3135	1652	20	
North Carolina.....	46413	37011	31473	24819	38756	24254	16799	10432	6365	2830	741	125	29	3962	3593	1665	1255	734	18	
South Carolina.....	24828	19360	16621	13719	22489	13774	9132	5615	2959	1418	409	50	22	1403	1105	677	105	262	12	
Georgia.....	43759	33899	27136	20897	34096	22196	13886	7623	4240	1641	455	87	19	427	375	232	495	137	8	
Alabama.....	36611	28215	22819	16222	31455	19340	11783	6924	2886	997	273	47	20	301	296	170	152	107	4	
Mississippi.....	19542	14164	11475	8602	20084	11995	6001	3289	1430	466	130	14	4	228	168	125	114	76	4	
Louisiana.....	13835	10736	7848	7218	20795	16394	7940	3369	1296	410	102	26	18	4015	3207	2014	1581	683	26	
Tennessee.....	67182	53821	44489	34218	51112	31323	19369	12755	7140	3039	855	109	22	973	772	372	379	294	6	
Kentucky.....	59290	46242	39190	32611	52965	32206	19958	11809	6639	3092	860	130	31	1048	786	534	754	629	10	
Ohio.....	144582	115832	96697	81431	138755	85944	54992	30208	18182	6778	1617	200	52	9560	9688	1719	1175	579	19	
Indiana.....	70468	57437	46129	36599	60002	37565	21678	13789	6195	2258	551	68	14	1258	1119	620	407	929	8	
Illinois.....	48963	37278	31062	24876	59580	31428	15809	8755	3660	1119	257	35	13	548	568	377	265	117	1	
Missouri.....	34337	26054	21222	16784	33772	20568	11384	5020	2439	814	183	28	5	193	195	266	154	74	1	
Arkansas.....	8607	6331	5077	3863	8232	5129	2751	1144	523	162	35	4	3	77	56	62	34	16	3	
Arkansas.....	19481	16051	12839	10887	22739	16025	8276	4442	1903	623	88	12	3	93	103	119	62	16	..	
Florida territory.....	2155	1917	1309	1305	4388	2801	1193	530	220	73	20	3	1	108	125	87	49	29	..	
Wisconsin.....	2627	1793	1303	1341	6328	3318	1191	544	201	55	10	2	1	16	32	28	19	6	..	
Iowa.....	2627	3138	2475	2179	6207	3310	1512	698	272	73	12	..	2	20	31	22	14	6	..	
Dist. of Columbia.....	2254	1755	1764	1728	2891	1953	1201	724	312	115	21	..	2	1168	948	562	523	237	13	
Total.....	1276790	1024072	879499	756092	1322440	866431	536568	314505	174226	80051	21679	2507	470	56323	52799	33308	28258	13493	286	

TABLE II.

FREE WHITE FEMALES IN U. S. 1840.																				FREE COLORED FEMALES, 1840.									
Under 5.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 30.	30 and under 40.	40 and under 50.	50 and under 60.	60 and under 70.	70 and under 80.	80 and under 90.	90 and under 100.	100 and upwards.	Under 10.	10 and under 24.	24 and under 36.	36 and under 55.	55 and under 100.	100 and upwards.											
38185	31458	30044	27940	42165	29046	20024	12304	7703	4122	1274	174	10	147	105	128	109	54	2	361										
17959	16693	15683	15457	21679	18369	14183	9821	6702	4000	1388	181	8	50	66	54	61	56	2	15728										
45313	40115	36832	40360	74230	43923	33109	22984	14645	8387	2955	375	2	899	1058	868	771	417	1											
6504	5812	5710	6030	10833	7138	4891	3130	2176	1196	444	59	2	318	489	425	360	232	1											
18253	16889	15964	16478	27120	20110	14863	10792	7220	4274	1436	153	4	967	1238	860	715	433	1											
20379	18877	16677	15744	21225	18163	12807	8612	5423	2875	951	100	7	76	106	65	76	43	44											
180769	154325	134977	137414	227137	138882	90163	53496	30190	14281	4152	522	25	6032	6851	6809	4454	1928	44											
27505	23161	20362	19701	31514	20530	14009	8841	5253	2769	803	82	3	2834	3106	3079	1485	748	12											
148786	115570	97972	96692	153803	92564	60838	37965	21007	9783	2725	316	24	6264	7426	6071	3806	1505	30											
4751	3859	3404	3237	5707	3469	2173	1341	837	320	92	9	3	2618	2456	1415	1127	662	14											
25680	19978	17560	18349	31021	19313	12177	7850	4376	1801	534	95	8	9134	8626	6686	5423	2902	76											
65286	52264	43996	42475	65737	40082	26928	16865	9086	4468	1256	202	40	7899	7616	4871	3556	2046	36											
43037	35221	29646	26965	43121	25906	18114	11374	6754	2943	962	150	19	3704	3475	2043	1454	801	28											
23639	18741	15822	14691	22392	13471	9145	5551	3168	1443	430	74	21	1392	1272	658	545	338	7											
40579	32680	25993	22395	31701	19603	12300	6795	3679	1485	443	79	25	375	381	229	192	178	24											
33917	26804	21786	17911	25574	15152	9184	4647	2407	847	205	45	14	271	313	188	124	104	9											
18235	13298	10919	8911	25574	15152	9184	4647	2407	847	205	45	14	181	151	133	122	59	5											
13718	10395	7760	7917	14064	7847	4284	2250	1075	381	81	19	1	4163	3679	2071	2164	986	13											
62684	51013	43327	35065	51907	30397	19198	11355	6465	2617	732	156	97	881	742	445	367	285	8											
55419	44022	37298	33207	47970	28008	18650	10907	6029	2915	735	137	23	936	800	536	680	593	11											
37725	110949	91291	84872	127740	75799	48588	28037	14636	5582	1345	173	22	2830	2784	1640	1053	487	8											
66397	53805	42890	36904	53176	32708	19967	10759	5035	1780	436	59	9	1112	1100	592	413	215	2											
44775	34913	28496	24078	38823	22676	12712	6514	2941	866	184	39	2	536	570	311	201	102	2											
32600	24291	19679	16932	20330	14889	8580	4259	2019	634	131	21	3	152	159	152	133	89	6											
8108	5853	4869	3911	5881	3317	1715	805	357	113	30	3	1	67	60	35	32	21	1											
1804	15089	11798	10819	18706	11864	6109	3294	1441	451	80	11	2	80	98	76	46	13	1											
2241	1761	1448	1322	2220	1219	704	354	156	49	10	2	1	108	123	78	75	35	4											
2528	1692	1289	1200	2713	1423	612	360	128	37	7	2	1	21	27	20	12	4	2											
4082	2902	2188	2064	3789	1865	979	491	187	51	6	—	1	14	39	8	16	4	15											
2291	1771	1899	2077	3030	2026	1338	795	413	149	41	1	1	1208	1455	1027	813	390	15											
1203349	986921	836588	792168	1253395	779097	502143	304810	173299	80562	32064	3231	315	55069	56562	41673	30385	15728	301	Total.										

TABLE III.

NAME OF STATE, &c.	MALE SLAVES IN U. S. 1840.					FEMALE SLAVES IN U. S. 1840.					SCHOOLS, &c.						
	Under 10.	10 and under 24.	24 and under 36.	36 and under 55.	55 and under 100.	Under 10.	10 and under 24.	24 and under 36.	36 and under 55.	55 and under 100.	No. of students in colleges.	No. of students in academies and grammar schools.	No. of scholars in primary and common schools.	No. of scholars in public churches.	No. of scholars in public churches.	No. of scholars in public churches.	No. of scholars in public churches.
Maine	4	266	86	8477	3385	164177	60212
New-Hampshire	2	433	68	5739	2127	183632	7715
Massachusetts	2	433	68	5739	2127	183632	7715
Rhode Island.	2	433	68	5739	2127	183632	7715
Connecticut	2	433	68	5739	2127	183632	7715
Vermont	2	433	68	5739	2127	183632	7715
New-York	12	1285	505	34715	10503	502367	27575
New-Jersey	12	1285	505	34715	10503	502367	27575
Pennsylvania	12	1285	505	34715	10503	502367	27575
Delaware	12	1285	505	34715	10503	502367	27575
Maryland	12	1285	505	34715	10503	502367	27575
Virginia	12	1285	505	34715	10503	502367	27575
North Carolina	12	1285	505	34715	10503	502367	27575
South Carolina	12	1285	505	34715	10503	502367	27575
Georgia	12	1285	505	34715	10503	502367	27575
Alabama	12	1285	505	34715	10503	502367	27575
Mississippi	12	1285	505	34715	10503	502367	27575
Louisiana	12	1285	505	34715	10503	502367	27575
Tennessee	12	1285	505	34715	10503	502367	27575
Kentucky	12	1285	505	34715	10503	502367	27575
Ohio	12	1285	505	34715	10503	502367	27575
Indiana	12	1285	505	34715	10503	502367	27575
Illinois	12	1285	505	34715	10503	502367	27575
Missouri	12	1285	505	34715	10503	502367	27575
Arkansas	12	1285	505	34715	10503	502367	27575
Michigan	12	1285	505	34715	10503	502367	27575
Florida territory	12	1285	505	34715	10503	502367	27575
Wisconsin "	12	1285	505	34715	10503	502367	27575
Iowa	12	1285	505	34715	10503	502367	27575
Dist. of Columbia	12	1285	505	34715	10503	502367	27575
Total	422599	391131	235373	145264	51288	421740	390075	239787	139201	49692	173	16233	3242	164159	472909	1845244	465264
																	549603

* For those over 100 see note to table 4.

TABLE IV.

STATES, &c.	Number of persons in U. S. employed in 1840, in							Deaf, dumb, blind and insane white persons, 1840				Deaf, dumb, blind and insane colored persons, '50				Total population of all classes in the United States, 1840			
	Mining	Agriculture	Commerce	Manufactures and trades	Navigation of the ocean	Navigation of lakes and rivers	Learned professions and engineers	Number of pensioners for revolutionary or military services	Deaf and dumb		Blind	Insane and idiots		Deaf and dumb	Blind		Insane and idiots		
									Under 14	14 and under 25		25 and upwards	At public charge				At private charge	At public charge	At private charge
Maine.....	36	101630	2921	21879	10091	539	1889	1469	47	73	102	180	207	330	13	10	56	38	501793
New-Hampshire.....	13	77949	1379	17826	452	198	1640	1408	43	41	97	153	180	306	9	3	8	11	284574
Massachusetts.....	499	87837	8063	372	27153	372	3804	2462	56	63	154	308	471	600	17	22	97	173	737699
Rhode Island.....	35	16617	1348	21271	1717	228	457	601	15	25	34	63	117	86	3	1	8	5	108830
Connecticut.....	151	56955	2743	27932	2700	431	1697	1666	60	141	108	143	114	384	8	13	20	24	309798
Vermont.....	77	73150	1303	13174	41	146	1563	1320	97	180	101	144	254	2	2	9	4	4	291948
New-York.....	1898	455954	28408	173193	5511	10167	14111	4080	269	362	408	875	683	1463	68	91	138	56	2428921
New-Jersey.....	266	56701	2983	27003	1143	1625	1627	472	33	29	102	126	144	225	15	26	46	27	373306
Pennsylvania.....	4603	207533	15338	108883	1815	3931	6766	1251	225	225	331	540	469	1477	51	96	132	55	1734033
Delaware.....	5	16015	467	3460	401	235	199	4	18	15	12	15	22	30	8	18	21	7	78065
Maryland.....	313	69851	3249	21325	721	1519	1647	94	43	58	77	165	133	254	66	91	69	42	469332
Virginia.....	1995	318771	6361	54147	582	2952	3806	993	133	111	209	426	317	731	150	466	326	58	1229797
North Carolina.....	589	217695	1734	14322	327	379	1086	609	82	80	118	223	152	428	74	167	192	29	733419
South Carolina.....	51	198363	1958	10325	381	318	1481	318	40	41	59	133	91	285	78	136	121	16	531398
Georgia.....	574	209383	2928	7984	962	352	1250	325	78	62	53	136	51	243	64	151	108	26	691392
Alabama.....	96	177489	9212	7195	256	758	1514	192	72	53	48	113	39	193	53	96	100	25	594756
Mississippi.....	14	130724	1303	4151	33	100	1506	163	25	16	23	43	14	102	28	69	66	16	375651
Louisiana.....	103	79289	8549	7565	1322	662	1018	12	14	17	11	37	6	49	17	36	38	7	352411
Tennessee.....	331	227739	2217	17815	55	302	2042	805	102	93	96	255	103	596	67	99	134	28	839210
Kentucky.....	704	197738	3418	23217	44	968	2487	886	120	138	152	236	305	490	77	141	132	48	779828
Ohio.....	293	273579	9201	66265	212	3323	5663	875	167	108	194	372	363	832	33	33	103	62	1519467
Indiana.....	782	148806	3076	20590	89	627	2257	380	112	91	94	138	110	377	15	19	47	28	685866
Illinois.....	742	103337	2506	13185	63	310	2021	195	54	48	53	86	36	177	21	10	65	14	476183
Missouri.....	41	92108	2322	11100	39	1885	1469	122	48	32	46	82	42	160	27	42	50	18	383702
Arkansas.....	41	26355	215	1173	3	39	301	234	18	11	11	26	9	36	2	8	13	8	97574
Michigan.....	40	56521	728	6890	24	166	901	90	7	9	15	25	9	37	9	4	21	5	212267
Florida.....	1	12117	481	1177	435	118	204	16	6	4	—	9	1	9	1	10	12	...	54477
Wisconsin.....	794	7647	479	1814	14	209	259	9	1	4	—	9	1	7	3	—	3	...	30945
Iowa.....	217	10469	355	1629	13	78	365	2	3	2	5	3	2	5	4	3	4	...	43112
District of Columbia.....	—	384	240	2278	136	80	203	15	1	5	2	6	1	13	4	9	4	3	43712
Total.....	15203	3717756	117575	791545	56025	33067	65236	20797	1919	2056	2707	5024	4329	10179	1892	2093	833	...	17062566

Total free white males, 7,249,266; free white females, 6,629,842. Total free colored males, 186,467; free colored females, 199,778. Total free colored, 386,245. Total male slaves, 1,246,408; female slaves, 1,240,805; Total total population, including 6,100 in the navy, 17,068,666. Total number of slaves of 100 years and upwards, males 753, females 580. The residence of the males, Maryland 58, Virginia 91, North Carolina 72, South Carolina 125, Georgia 126, Alabama 60; other southern states the remainder. Females: New-York 2, New-Jersey 1, Pennsylvania 1, Delaware 36, Maryland 120, Virginia 84, North Carolina 84, South Carolina 72, Georgia 47; other southern states the remainder.

TABLE V.

SEVENTH CENSUS, 1850.

POPULATION OF THE UNITED STATES—APPORTIONMENT OF REPRESENTATIVES.

States	White Population	Free colored Population	Total free	Slaves	Federal representative Population	No. of Rep.	Fractions
Alabama	426,515	2,250	428,765	342,894	634,501	6	*72,289
Arkansas	126,071	587	162,658	46,983	190,848	2	3,444
California	200,000	—	200,000	—	200,000	2	13,596
Connecticut	363,189	7,415	370,604	—	370,604	3	*89,498
Delaware	71,282	17,957	89,239	2,289	90,612	—	*90,612
Florida	47,120	926	48,046	39,341	71,650	—	*71,650
Georgia	513,083	2,586	505,669	362,966	733,418	7	*77,534
Indiana	983,634	5,100	988,734	—	988,734	10	*51,714
Illinois	853,059	5,239	858,298	—	858,298	9	20,980
Iowa	191,830	292	192,122	—	192,122	2	4,718
Kentucky	770,061	9,667	779,728	221,768	912,788	9	*75,470
Louisiana	254,271	15,685	269,955	230,807	408,440	4	33,632
Maine	581,920	1,312	583,232	—	583,232	6	21,020
Massachusetts	985,498	8,773	994,271	—	994,271	10	*57,251
Maryland	418,763	73,943	492,706	89,800	546,586	5	*78,076
Mississippi	291,536	898	292,434	300,419	472,685	4	4,172
Michigan	393,156	2,547	395,703	—	395,703	5	20,895
Missouri	592,176	2,667	594,843	89,289	648,416	6	*86,204
New-Hampshire	317,354	477	317,831	—	317,831	3	36,725
New-York	3,042,574	47,448	3,090,022	—	2,090,022	32	*91,556
New-Jersey	466,283	22,269	488,552	119	488,623	5	20,113
North Carolina	552,477	27,271	580,458	288,412	753,505	8	3,889
Ohio	1,951,101	25,930	1,977,031	—	1,977,031	21	9,289
Pennsylvania	2,258,480	53,201	2,311,681	—	2,311,681	24	*62,533
Rhode Island	144,012	3,543	147,555	—	147,555	1	*53,853
South Carolina	274,775	8,769	283,544	384,925	514,499	5	45,989
Tennessee	767,319	6,280	773,599	249,519	923,300	9	*89,992
Texas	133,131	926	134,057	53,346	160,064	1	*72,362
Vermont	312,756	710	313,466	—	313,466	3	32,360
Virginia	894,149	53,906	948,055	473,026	1,231,870	13	13,744
Wisconsin	303,600	626	304,226	—	304,226	3	23,120
	19,178,885	409,200	10,927,085	3,173,902	—	—	—
District of Columbia	38,027	9,973	48,000	3,687	—	—	—

TERRITORIES.

Minnesota	6,192	—	6,192	—	—	—	—
New-Mexico	61,632	—	61,632	—	—	—	—
Oregon	20,000	—	20,000	—	—	—	—
Utah	25,000	—	25,000	—	—	—	—

19,668,736... 419,173... 20,087,909... 3,175,589... 21,832,621... 218... —

Representatives allowed for fractional numbers, as marked. 15... —

Whole number of Representatives under the next apportionment. 233... —

* These states have a representative added to the number of apportionment.

† Including 710 civilized Indians.

RECAPITULATION.

	Total free Population	Slaves	Representative Population
Free states	13,533,328	119	13,533,399
Slave state	6,393,757	3,175,783	8,299,226
District and territories	160,824	3,687	—
	20,087,909	3,179,589	21,832,625

Total free population... 20,087,909

Slaves... 3,179,589

23,267,498

Ratio of representation... 93,702

	Free Whites	Other Free	Slaves	Total
1790	3,172,464	59,466	697,897	3,929,827
1800	4,304,505	108,935	893,041	5,305,041
1810	5,862,004	186,446	1,191,364	7,239,814
1820	7,861,907	238,156	1,538,128	9,638,191
1830	10,537,378	319,599	2,019,043	12,866,020
1840	14,195,809	386,293	2,487,355	17,069,453
1850	19,668,736	419,173	3,179,589	23,267,498

The annexed table shows the increase of population for each period of ten years, since the census of 1790 :

Ten years ending	Free Whites	Other Free	Slaves	Total
1800.....	1,132,041.....	48,229.....	195,144.....	1,375,114.....
1810.....	1,557,499.....	78,051.....	298,323.....	1,933,873.....
1820.....	1,999,913.....	51,710.....	346,764.....	2,398,377.....
1830.....	2,675,471.....	81,443.....	470,915.....	3,227,829.....
1840.....	3,658,427.....	66,694.....	478,312.....	4,203,433.....
1850.....	5,472,931.....	32,880.....	692,231.....	6,198,045.....
Total.....	16,496,272.....	359,707.....	2,481,692.....	19,337,671.....

UNITED STATES CENSUS OF 1850.

—ANALYSIS OF GROWTH AND EXTENT OF POPULATION EVERY TEN YEARS—POPULATION AND DENSITY OF NEW-ENGLAND STATES, OF FIVE MIDDLE STATES, OF FOUR SOUTH-EASTERN STATES, OF THE SIXTEEN ATLANTIC STATES ; POPULATION, SQUARE MILES, AND DENSITY NORTHWESTERN AND WESTERN STATES; GENERAL SYNOPSIS, ETC.—In the preceding pages of this work we have published some invaluable statistical deductions upon the population of the United States, &c., from that veteran geographer and distinguished statist, William Darby, of Washington. We now extract from the *National Intelligencer* further valuable reflections from the same source :

By reference to your files, you will see that on the 2d January, 1845, No. 9944, your paper of that day contained Tabular Views, prepared by me on the same subject. I may now simply observe, that, with some labor, I had found that an annual increment of three per cent. per annum, operating as a base on 3,929,827, the amount of the census of 1790, and without reference to the intermediate decennial enumerations, gave the following comparative results :

	By actual census.	By calculation 3 per cent. at a mean
1790.....	3,929,927.....	—
1800.....	5,305,925.....	5,281,468.....
1810.....	7,238,903.....	7,695,964.....
1820.....	9,605,547.....	9,535,182.....
1830.....	12,856,407.....	12,811,118.....
1840.....	17,063,353.....	17,217,706.....
1850.....	23,138,004.....	23,261,454.....

As recorded on your files, and as alluded to above, the aggregate population of the United States, from 1790 to 1850, inclusive, in six decennial enumerations, came out, comparatively, with the census of 1850, on an annual increment of three per cent. in a period of 60 years, differing only 23,450, or about one to one hundred, in favor of *three per cent.* We may, therefore, regard three per cent. per annum the mean increment of the population of the United States as an established principle.

No other part of this essay can be more suitable than in the introductory remarks we are now recording to obviate a very general error as to the changeable effects on the population of the United States by foreign emigration, and more particularly from 1840

to 1850. A single comparison, I trust, is sufficient to show, by the rule of proportion, that if we suppose that, in the decennial period, 1790–1800, 5,000 emigrants had lent their influence on the increase from 3,929,827 to 5,881,462, that upwards of 21,000 must have entered as element to produce the same per centage, when from 1840 to 1850 the gross numbers rise from 17,063,353 to 23,138,084. There can be no doubt but that foreign element has continually entered into the increase of United States population ; but the very remarkably regular increase, by a ratio of three per cent. per annum, in all the decennial periods, forming the cycle of sixty years, from 1790 to 1850, decides the fact that regular progressive results prove as regular element, proportionally, in decennial periods, and of course on the whole cycle.

The spread of the Anglo-Saxon population over the great central zone of North America, if taken alone, would rank as one, if not the most important one, of the permanent changes in the condition of our race ; but when combined, on a continent presenting two oceanic fronts, with the rail-road means of locomotion and telegraphic rapidity of thought, and one people, with a common and energetic language, imbued with similar views on political and civil government, and also of the principles of moral conduct, an advance and permanency of human prosperity and happiness may be rationally hoped for, on an extent of surface never before realized.

The actual area represented by Summary Table, No. 7, does not embrace one-third of the ground, or perhaps not a greater proportion of the productive soil, over which, before the close of the current century, the Anglo-Saxons of North America must spread with a greater or less density locally. The general law of increase is shown in the accompanying tables ; but the relative spread and location of the masses depend on other principles, two only of which are relevant to the purpose of our present view. These are landed property and climate, the tendency of both of which have operated, and must so continue, to prevent any great particular density of population locally, until after the whole surface is more or less peopled, and the land-ownership changed from public to private property.

If we allow Table 7 to represent the one-third of the habitable surface which must, in all human probability, be peopled by the inhabitants of the Anglo-Saxon United States, the entire surface will embrace *three millions three hundred thousand square miles*.

On the principles of an increment of three per cent. per annum, the aggregate population of the United States in 1901 will be about *one hundred and two millions*; and yet, with a distributive population of only thirty-one to the square mile. In the intermediate period, the central, western, and north-western sections will receive population in the same manner as have the parts already organized. States will be formed after states, but cannot, from known causes, have any considerable local density until after the beginning of the next century. Then, however, from 1901, the various parts, as particular circumstances may operate, and especially western emigration decline, the population must become gradually more and more equally distributed. A remark intrudes itself, and demands to be introduced. The

history of the United States is *unique*. Old and stupendous principles, hitherto widely spread and unconnected, are here united. The great difference of mean and extreme aerial temperature prevailing on the opposing shores of the Atlantic ocean, prevail, also, and from the same natural causes, on those parts of the Atlantic and Pacific shores of North America, embraced by the limits of the United States. The difference here alluded to, which must, whilst the present order of things prevail on earth, modify the history of the United States as it has the like climates round the whole globe, demands a separate article, which, with another most influential element, the iron rail-road and car, I may prepare, health and circumstances admitting. We now proceed to the tabular views of population. In this essay, I have endeavored to place before the public the difference between the general and local spread of the people, and to show, from data already in our possession, the probable aspect of so much of futurity as is comprised in the current of the commencing half century.

TABLE 1.—*Synoptic Table of the extent and population of the seven Northeastern States of the United States, as per census, of 1850.*

Political Section	Extent in square miles	Population 1850	Population to square mile	Ag. population to square mile
Maine.....	35,000	582,626	17	41½ nearly.
New-Hampshire.....	8,030	318,063	33	
Vermont.....	8,000	314,322	39	
Massachusetts.....	7,250	991,724	137	
Rhode Island.....	1,200	147,549	126	
Connecticut.....	4,750	370,913	80	
New-York.....	46,000	3,098,818	67	
Aggregates.....	110,230	5,827,015	41 3-10	

TABLE 2.—*Synoptic Table of extent and population of the five Central Atlantic States, as per census of 1850.*

Political Section	Extent in square miles	Population 1850	Population to square mile	Ag. population to square mile
New-Jersey.....	6,850	489,868	71	41 nearly.
Pennsylvania.....	47,000	2,341,204	50	
Delaware.....	2,120	92,609	41	
Maryland.....	11,000	583,016	53	
Virginia.....	61,000	1,450,000	24	
Aggregates.....	127,970	4,956,697	41	

TABLE 3.—*Synoptic Table of extent and population of the four Southeastern Atlantic States, as per census of 1850.*

Political Section	Extent in square miles	Population as per census 1850	Population to sq. mile	Ag. Population to square mile
North Carolina.....	45,500	863,000	19	13
South Carolina.....	28,000	630,000	22	
Georgia.....	58,000	920,000	16	
Florida.....	57,000	67,000	1	
Aggregates.....	188,500	2,480,000	13	

NOTE.—Table 3 gives an aggregate population which demands some special remarks. The three southern states, North Carolina, South Carolina, and Georgia, with a joint area of 131,500 square miles, have an aggregate population of 2,413,000, or a fraction over eighteen to the square mile.

TABLE 4.—*Collective Table of the aggregate extent and population of the sixteen Atlantic States of the United States as given in detail per Tables 1, 2 and 3.*

Political section	Extent in square miles	Aggregate population 1850	Aggregate population to square mile
No. 1. NE. section	110,230	5,827,015	41.3
No. 2. Central section	127,970	4,956,697	41
No. 3. SE. section	188,500	2,480,000	13
Amount	426,700	13,263,712	31

NOTE. An aggregate population of 50 to the square mile on the Atlantic States would give 21,325,000; but the capability would more than exceed 100 to the square mile, or give upwards of forty-two millions.

TABLE 5.—*Synoptic Table of the six States of the United States west of Pennsylvania and Virginia, north of Tennessee, and east of the Upper Mississippi River, as per census of 1850.*

Political Section	Extent in square miles	Aggregate Population 1850	Population to the square mile
Kentucky	40,580	782,000	19
Ohio	44,000	1,981,940	45
Indiana	36,670	990,258	20
Illinois	53,480	850,000	15
Wisconsin	80,000	305,596	4
Michigan	56,610	397,576	7
Amount	311,340	5,407,370	17

NOTE. This table, from the aggregate results of its general elements, demands some special remarks. The four first-named states, with an aggregate surface of 174,730 square miles, presents an aggregate population of 4,604,198, and an aggregate of 26 to the square mile.

TABLE 6.—*Synoptic Table of the following named seven States, included in the census of 1850.*

Political Section	Extent in square miles	Aggregate population 1850	Population to the square mile
Tennessee	44,000	1,050,000	24
Alabama	58,000	770,000	13
Mississippi	48,000	620,000	13
Louisiana	48,000	450,000	9
Arkansas	50,000	195,000	4
Missouri	65,000	681,000	10
Iowa	60,000	192,000	3
Amount	373,000	3,968,000	10 very nearly.

TABLE 7.—*Presenting a special and general view of those parts of the United States comprised in the Census of 1850, eastward of, but comprising also Louisiana, Arkansas, Missouri, and Iowa.*

States	Square miles	Population as per census 1850	Population to sq. mile	Mean density of population
Maine	35,000	582,626	17	41 3-10
New-Hampshire	8,030	318,063	33	
Vermont	8,000	314,322	39	
Massachusetts	7,520	994,724	137	
Rhode Island	1,200	147,549	126	13
Connecticut	4,750	370,913	80	
New-York	46,000	3,098,818	67	
New-Jersey	6,850	489,868	71	
Pennsylvania	47,000	2,341,204	50	41
Delaware	2,120	92,609	41	
Maryland	11,000	583,016	53	
Virginia	61,000	1,450,000	24	
North Carolina	45,500	863,500	19	17
South Carolina	28,000	930,000	22	
Georgia	58,000	920,000	16	
Florida	57,000	67,000	1	
Kentucky	40,580	782,000	19	17
Ohio	44,000	1,981,940	45	
Indiana	36,670	990,258	20	
Illinois	53,480	850,000	15	
Wisconsin	80,000	305,000	4	10
Michigan	56,610	397,000	7	
Tennessee	44,000	1,050,000	24	
Alabama	58,000	770,000	13	
Mississippi	48,900	620,000	13	10
Louisiana	48,000	450,000	9	
Arkansas	50,000	195,000	4	
Missouri	65,000	681,000	10	
Iowa	60,000	192,000	3	
Totals	1,111,040	22,639,040	21	

UNITED STATES CENSUS STATISTICS, 1850—PROGRESS OF POPULATION AND INDUSTRY, ETC.—COMPARATIVE TABLES.—[For more complete tables see Appendix.]

From the able Census Report of Mr. Kennedy, we extract the following :

The seventh enumeration of the inhabitants of the United States, exhibits results which every citizen of the country may contemplate with gratification and pride. Since the census of 1840, there have been added to the territory of the republic, by annexation, conquest and purchase, 824,969 square miles ; and our title to a region covering 341,463 square miles, which before properly belonged to us, but was claimed and partially occupied by a foreign power, has been established by negotiation, and it has been brought within our acknowledged boundaries. By such means the area of the United States has been extended, during the past ten years, from 2,055,163 to 3,221,595 square miles, without including the great lakes which lie upon our northern border, or the bays which indent our Atlantic and Pacific shores ; all which has come within the scope of the seventh census.

In the endeavor to ascertain the progress of our population since 1840, it will be proper to deduct from the aggregate number of inhabitants shown by the present census, the population of Texas in 1840, and the number embraced within the limits of California and the new territories, at the time of their acquisition. From the best information which has come to hand, it is believed that Texas contained, in 1840, 75,000 inhabitants ; and that when California, New-Mexico, and Oregon, came into our possession, in 1846, they had a population of 97,000. It thus appears that we have received by accessions of territory, since 1840, an accession of 172,000 to the number of our people.

The increase which has taken place in those extended regions, since they came under the authority of our government, should obviously be reckoned as a part of the development and progress of our population ; nor is it necessary to complicate the comparison by taking into account the probable natural increase of this acquired population, because we have not the means of determining the rate of its advancement, nor the law which governed its progress, while yet beyond the influence of our political system. The year 1840, rather than the date of the annexation of Texas, has been taken for estimating her population, in connection with that of the Union, because it may safely be assumed that, whatever the increase during the five intervening years may have been, it was mainly, if not altogether, derived from the United States.

Owing to delays and difficulties mentioned

in completing the work, which no action on the part of this office could obviate, some of the returns from California have not yet been received. Assuming the population of California to be 165,000, (which we do partly by estimate,) and omitting that of Utah,* estimated at 12,000, the total number of inhabitants in the United States was, on the 1st of June, 1850, 23,246,301. The absolute increase from the 1st June, 1840, has been 6,176,848, and the actual increase per cent. is 36.18. But it has been shown that the probable amount of population acquired by additions of territory should be deducted in making a comparison between the results of the present and the last census. These reductions diminish the total population of the country, as a basis of comparison, to 23,074,301, and the increase to 6,004,848. The relative increase, after this allowance, is found to be 35.17 per cent. The aggregate number of whites in 1850 was 19,619,336, exhibiting a gain upon the number of the same class in 1840 of 5,423,371, and a relative increase of 38.20 per cent. But, excluding the 153,000 free population supposed to have been acquired by the addition of territory since 1840, the gain is 5,270,371, and the increase per cent. is 37.14.

The number of slaves, by the present census, is 3,198,298, which shows an increase of 711,085, equal to 28.58 per cent. If we deduct 19,000 for the probable slave population of Texas in 1840, the result of the comparison will be slightly different. The absolute increase will be 692,085, and the rate per cent. 27.83.

The number of free colored in 1850, was 428,637 ; in 1840, 386,245. The increase of this class has been 43,392, or 10.95 per cent.

From 1830 to 1840, the increase of the whole population was at the rate of 32.67 per cent. At the same rate of advancement, the absolute gain for the ten years last past would have been 5,578,333, or 426,515 less than it has been, without including the increase consequent upon additions of territory.

The aggregate increase of population, from all sources, shows a relative advance greater than that of any other decennial term, except that from the second to the third census, during which time the country received an accession of inhabitants, by the purchase of Louisiana, considerably greater than 1 per cent. of the whole number. Rejecting, from the census of 1810, 1.45 per cent. for the population of Louisiana, and from the census of 1850 one per cent. for that of Texas, California, &c., the result is in favor of the last ten years by about one-fourteenth of one per cent. ; the gain from 1800 to 1810 being 35.05 per cent. ; and

* Since ascertained to be 11,381.

from 1840 to 1850, 35.12 per cent. But, without going behind the sum of the returns, it appears that the increase from the second to the third census was thirty-two hundredths of one per cent. greater than the increase from the sixth to the seventh.

The decennial increase of the most favored portions of Europe is less than $1\frac{1}{2}$ per cent. per annum, while with the United States it

is at the rate of $3\frac{1}{2}$ per cent. According to our past progress, viewed in connection with that of European nations, the population of the United States in forty years will exceed that of England, France, Spain, Portugal, Sweden, and Switzerland, combined.

The relative progress of the several races and classes of the population is shown in the following tabular statement :

Increase per cent. of each class of Inhabitants in the United States for sixty years.

Classes	1790 to 1800	1800 to 1810	1810 to 1820	1820 to 1830	1830 to 1840	1840 to 1850
	1800	1810	1820	1830	1840	1850
Whites	35.7	36.2	34.19	33.95	34.7	38.28
Free colored	82.2	72.2	25.25	36.85	26.9	10.9
Slaves	27.9	33.4	29.1	39.61	23.8	28.58
Total colored	32.2	37.6	28.58	31.44	23.4	26.22
Total population	35.01	36.45	33.12	33.48	32.6	36.25

The census had been taken previously to 1830, on the 1st of August ; the enumeration began that year on the 1st of June, two months earlier, so that the interval between the fourth and fifth censuses was two months less than ten years, which time allowed for,

would bring the total increase up to the rate of 34.36 per cent.

The table given below shows the increase from 1790 to 1850, without reference to intervening periods :

No. of	1790	1850	Absolute increase in sixty years	Increase per cent. in sixty years
Whites	3,172,464	19,638,019	16,457,555	527.97
Free colored	59,466	428,637	369,171	617.44
Slaves	697,897	3,184,262	2,486,365	350.13
Total free colored and slaves	757,363	3,612,899	2,855,536	377.00
Total population	3,929,827	23,246,301	19,316,444	491.52

Sixty years since, the proportion between the whites and blacks, bond and free, was 4.2 to 1. In 1850 it was 5.26 to 1, and the ratio in favor of the former race is increasing. Had the blacks increased as fast as the whites during these sixty years, their number on the first June would have been 4,657,239 ; so that, in comparison with the whites, they have lost, in this period, 1,035,340.

This disparity is much more than accounted for by European emigration to the United States. Dr. Chickering, in an essay upon emigration, published at Boston in 1848—distinguished for great elaborateness of research—estimates the gain of the white population, from this source, at 3,922,152. No reliable record was kept of the number of emigrants into the United States until 1820, when, by the law of March, 1819, the collectors were required to make quarterly returns of foreign passengers arriving in their districts. For the first ten years, the returns under the law afford materials for only an approximation to a true state of the facts involved in this inquiry.

Dr. Chickering assumes, as a result of his investigations, that of the 6,431,088 inhabitants of the United States in 1820, 1,430,906 were foreigners, arriving subsequent to 1790, or the descendants of such. According to Dr. Seybert, an earlier writer

upon statistics, the number of foreign passengers, from 1790 to 1810, was, as nearly as could be ascertained, 120,000 ; and from the estimates of Dr. Seybert, and other evidence, Hon. George Tucker, author of a valuable work on the census of 1840, supposes the number from 1810 to 1820, to have been 114,000. These estimates make, for the thirty years next preceding 1820, 234,000.

If we reckon the increase of these emigrants at the average rate of the whole body of the white population during these three decades, they and their descendants, in 1820, would amount to about 360,000. From 1820 to 1830, there arrived, according to the returns of the custom-houses, 135,986 foreign passengers, and from 1830 to 1840, 579,370, making for the twenty-years 715,356. During this period, a large number of emigrants from England, Scotland and Ireland, came into the United States through Canada. Dr. Chickering estimates the number of such, from 1820 to 1830, at 67,993 ; and from 1830 to 1840, at 199,130—for the twenty years together, 267,123. During the same time a considerable number are supposed to have landed at New-York with the purpose of pursuing their route to Canada ; but it is probable that the number of these was balanced by the omissions in the official returns.

From 1840 to 1850, the arrivals of foreign passengers, in the ports of the United States, have been as follows :

1810-41	83,504
1812	101,107
1813	75,159
1814	74,607
1815	102,415
1816*	202,157
1817	234,756
1818	226,534
1819	209,610
1850†	183,011
Total	1,542,850

Within the last ten years there has probably been comparatively little immigration of foreigners into the United States over the Canada frontier; the disposition to take the route by Quebec having yielded to the increased facilities for direct passenger transportation to the cities of the Union; what there has been, may, perhaps, be considered as equalled by the number of foreigners passing into Canada, after landing at New-York, many having been drawn thither by the opportunities of employment afforded by the public works of the province. As the heaviest portion of this great influx of emigration took place in the latter half of the decade, it will probably be fair to estimate the natural increase during the term, at twelve per cent., being about one-third of that of the white population of the country at its commencement.

Taking for granted the substantial correctness of the above estimates, and the accuracy of the returns during the last ten years, the following statement will show the accessions to our population from emigration from 1790 to 1850 :

Number of foreigners arriving from 1790 to 1810	120,000
Natural increase, reckoned in periods often years	47,560
Number of foreigners arriving from 1810 to 1820	114,000
Increase of the above to 1820	19,000
Increase from 1810 to 1820 of those arriving previous to 1810	58,450
Total number of immigrants and descendants of immigrants in 1820	359,010
Number of immigrants arriving from 1820 to 1830	203,979
Increase of the above	35,728
Increase from 1820 to 1830 of immigrants and descendants of immigrants in the country in 1820	134,130

* This return includes fifteen months, from July 1, 1845, to 30th September, 1846.

† The report from the State Department for this year, gives 315,333, as the total number of passengers arriving in the United States; but of these, 30,023 were citizens of the Atlantic States proceeding to California by sea, and 5,320 natives of the country returning from visits abroad. A deduction of 106,879 is made from the balance, for that portion of the year from June 1 to September 30.

Total number of immigrants and descendants of immigrants in the United States in 1830	732,847
Number of immigrants arriving from 1830 to 1840	778,500
Increase of the above	135,150
Increase from 1830 to 1840 of immigrants and descendants of immigrants in the United States in 1830	254,445
Total number of immigrants and descendants of immigrants in the United States in 1840	1,900,942
Number of immigrants arriving from 1840 to 1850	1,542,850
Increase of the above at twelve per cent.	185,142
Increase from 1840 to 1850 of immigrants and descendants of immigrants in the United States in 1840	722,000
Total number of immigrants into the United States since 1790, and their descendants in 1850	4,350,934

The density of population is a branch of the subject which naturally attracts the attention of the inquirer. The following table, showing the number of inhabitants to the square mile in 1850, and the number of square miles, has been prepared from the most authentic data accessible to this office :

Table of the Area and the number of Inhabitants to the square mile in each State and Territory in the Union.

State	Area in square miles	Population in 1850	No. of inhabitants to sq. m.
Maine	30,000	583,188	19-44
New-Hampshire	9,280	317,964	34-26
Vermont	10,212	313,611	30-07
Massachusetts	7,800	994,499	126-11
Rhode Island	1,306	147,544	108-05
Connecticut	4,674	370,791	79-83
New-York	46,000	3,097,394	67-66
New-Jersey	8,320	489,555	60-04
Pennsylvania	46,000	2,311,786	50-25
Delaware	2,120	91,535	43-64
Maryland	9,356	583,035	62-31
Virginia	61,352	1,421,661	23-17
North Carolina	45,000	868,903	19-30
South Carolina	24,500	668,507	27-28
Georgia	58,000	905,999	15-68
Alabama	50,722	771,671	15-21
Mississippi	47,156	606,555	12-86
Louisiana	46,431	511,974	11-02
Texas	237,321	212,592	-89
Florida	59,268	87,401	1-47
Kentucky	37,680	982,405	26-07
Tennessee	45,660	1,002,625	21-93
Missouri	67,380	682,043	10-12
Arkansas	52,198	209,639	4-01
Ohio	39,964	1,980,408	49-55
Indiana	33,809	988,416	29-23
Illinois	55,405	851,470	15-37
Michigan	56,243	397,654	7-07
Iowa	50,914	192,214	3-77
Wisconsin	53,924	305,191	5-65
California	168,982	.....	.....
Minnesota	83,000	6,077	-07
Oregon	341,463	13,293	-03
New-Mexico	219,774	61,505	-28
Utah	187,923	11,381	.....
Nebraska	136,700	.....	.....
Indian	187,171	.....	.....
North West	587,564	.....	.....
Dist. of Columbia	60	51,687	861-45

From the location, climate, and productions, and the habits and pursuits of their inhabitants, the states of the Union may be properly arranged into the following groups :

	Area in square miles	Population	No. inhabitants to sq. miles
New-England States (6)	63,226	2,727,597	43.07
Middle States, including Maryland, Delaware and Ohio (6)	151,760	8,653,713	57.02
Coast Planting States, including South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana (6)	286,077	3,537,089	12.36
Central Slave States: Virginia, North Carolina, Tennessee, Kentucky, Missouri, Arkansas (6)	308,210	5,168,000	16.75
Northwestern States: Indiana, Illinois, Michigan, Wisconsin, and Iowa (5)	250,000	2,735,000	10.92
Texas	237,000	212,000	.89
California	189,000	165,000	.87

There are points of agreement in the general characteristics of the states combined in the following groups, which warrant the mode of arrangement adopted. Maryland is classed, as heretofore, with the middle states, because its leading interests appear to connect it rather with the commercial and manufacturing section to which it is here assigned, than with the purely agricultural states. Ohio is placed in the same connection for nearly similar reasons.

There seems to be a marked propriety for setting off the new agricultural states of the northwest by themselves, as a preliminary to the comparison of their progress with other portions of the Union. The occupations which give employment to the people of the central range of states south of the line of the Potomac, distinguish them to some extent from that division to which we have given the appellation of the coast planting states. In the latter, cotton, sugar, and rice are the great staples, the cultivation of which is so absorbing as to stamp its impress on the character of the people. The industry of the central states is more diversified, the surface of the country is more broken, the modes of cultivation are different, and the minuter divisions of labor create more numerous and less accordant interests. So far as Texas is settled, its population closely assimilates with that of the other coast planting states; but it would obviously convey no well-founded idea of the density of population in that section to distribute their people over the vast uninhabited region of Texas. For the same reason, and the additional one of the isolation of her position, California is considered distinct from other states.

Taking the thirty-one states together, their area is 1,485,870 square miles, and the average number of their inhabitants is 15.48 to the square mile. The total area of the United States is 3,220,000 square miles, and the average density of population is 7.219 to the square mile.

The areas assigned to those states and territories in which public lands are situated, are doubtless correct, being taken from the records of the land office; but, as to those attributed to the older states, the same means of verifying their accuracy, or the want of it, do not exist. But care has been taken to consult the best local authorities for

ascertaining the extent of surface in those states; and as the figures adopted are found to agree with, or differ but slightly from those assumed to be correct at the general land office, it is probable they do not vary essentially from the exact truth.

The area of some of the states, as Maryland and Virginia, are stated considerably below the commonly-assumed extent of their territory, which may be accounted for from the supposition that the portions of the surface within their exterior limits, covered by large bodies of water, have been subtracted from the aggregate amount. This is known to be the case in regard to Maryland, the superficial extent of which, within the outlines of its boundaries, is 13,959 square miles; and is deemed probable with reference to Virginia, from the fact that many geographers have given its total area as high as 66,000 square miles.

It appears from the returns, that during the year ending on the first of June, 1850, there escaped from their owners one thousand and eleven slaves, and that during the same period fourteen hundred and sixty-seven thousand were manumitted. The number of both classes will appear in the following table:

Manumitted and Fugitive Slaves—1850.

	Manumitted	Fugitives
Delaware	277	26
Maryland	493	279
Virginia	218	83
Kentucky	152	96
Tennessee	45	70
North Carolina	2	64
South Carolina	2	16
Georgia	19	89
Florida	22	18
Alabama	16	29
Mississippi	6	41
Louisiana	159	90
Texas	5	29
Arkansas	1	21
Missouri	50	60
Totals	1,467	1,011

In connection with this statement, as affecting the natural increase of the free colored population of the United States, it may be proper to remark, that during the year to which the census applies, the Colonization Society sent 562 colored emigrants to Liberia. In our calculations respecting the increase of the free colored population, we have considered that class of persons independent of these two causes which respectively swell and diminish their number.

Mortality.—The statistics of mortality for the census year, represent the number of deaths occurring within the year as 320,194, the ratio being as one to 72.6 of the living population, or as ten to each 726 of the population. The rate of mortality in this statement, taken as a whole, seems so much less than that of any portion of Europe, that it must, at present, be received with some degree of allowance.

Should a more critical examination, which time will enable us to exercise, prove the returns of the number of deaths too small, such a result will not affect their value, for the purposes of comparison of one portion of the country with another, or cause with effect—the table will possess an interest second to none other in the work, and the many valuable truths which it will suggest, will be found of great practical advantage. Medical men will accord to the Census Board no small meed of credit, for the wisdom manifested in an arrangement which will throw more light on the history of disease in the United States, and present in connection more interesting facts connected therewith, than the united efforts of all scientific men have heretofore accomplished.

The registration of the annual deaths, as well as of the living, marks an epoch in the history of "life contingencies" in the United States. To trace the effect of the wide range of physical features and natural productions upon the human constitution and faculties, presents to every reflecting mind an interesting field of research. Likewise, to investigate the influence of mental occupations and industrial pursuits, and of the wide diversity of climate—from the highlands of Maine to the everglades of Florida—upon the persistence and duration of life, is an object of permanent importance, not only in a scientific, but in a commercial and national point of view. For all such inquiries, the returns of 1850 furnish facilities, less satisfactory indeed than would have been given by a permanent system of registration, but far superior to those hitherto available.

Among the more immediate advantages to be derived from data of this kind, through the medium of life tables, they will form a basis for the equitable distribution of life-interests in estates, pensions, and legacies; they would assign the true valuation of life annuities, assurances, and reversions of heritable property, and tend to protect the public from many ill adjusted financial schemes, founded on ignorance of the true probabilities of life. They would correct a multitude of prejudices and misconceptions respecting the healthiness of the different localities, and besides this, form a common standard of reference in all those moral, sanitary, and mercantile statistics which have brought to light most valuable truths and generalizations, and

which give promise of still greater benefits in the advancement of civilization.

Without intending to discuss several attempts heretofore made for the construction of life tables in this country, let it be observed, as is universally admitted, that the ratio of the annual deaths to the contemporary number living at each age, constitutes the implicit element of computation.

An enumeration of the living, or of the deaths only, is insufficient for the purpose, unless the population is stationary, or due allowance is made for the changes wrought by births and migration during the whole century previous.

The assumption of a stationary population, however, can scarcely be entertained of even the oldest settled parts of the Union. The value and prospects of life, and the influence of climate on longevity, are lost or obscured, both by recent and remote changes. It is within the memory of persons now living, when most of our large cities were in their infancy; when forests were standing on grounds since occupied by the busiest marts of trade, and the corn was waving in the wind where now are the most populous streets.

Periods of unusual emigration or exodus have been followed by a temporary decrease, only to recommence with augmented numbers. But the chief inequality with reference to the present inquiry arises from the fact, that the great mass of emigrants are almost exclusively in the prime of life. Traced upon the texture of society, as these changes must be, in relative excesses and deficiencies at the several ages, the joint statistics of the living and of the annual deaths afford the only feasible mode of arriving at the law of mortality, independent of those former changes.

A life table for the State of Maryland has been prepared from a joint comparison of the abstracts of the returns of 1850. It comprises a very full interpretation of the laws of vitality indicated by the data for the year of enumeration, which may be regarded as one of average mortality. In the present case, the investigation relates exclusively to the white population of Maryland, irrespective of city or country residents, or of the sexes, or of foreign or indigenous extraction.

The results and derived tables are specified at length in the Report on Maryland. From the preliminary table of population there given, it would appear that the line of equal division of the living falls upon the age of twenty; one-half of the white population being under, and the other half above, twenty years of age; or distributing with reference to three equal parts, one-third of the population is under thirteen and a half years of age; one-third is included between this and the age of twenty-nine, and the remaining

third is above twenty-nine years of age. With respect to the deaths, the points of equal division fall upon ages several years younger than in the corresponding distributions of the living.

For exhibiting the law of mortality for individual lives, the data of the census were equated, and reduced to the simple case of 10,268 infants born on the same day, and commencing life simultaneously.

Assuming that like circumstances will continue to prevail during the years to come in this state, which may be regarded as certain, the population will continually be affected by the same rate of mortality. And hence we may safely estimate and predict, that, of the specified number of infants at the outset of life, 1,243 will perish prematurely in the first year of existence, and 9,025, or numbers in that proportion, will survive to enter upon their second year. A very considerable, but decreasing mortality likewise prevails in the second and third years, leaving only 8,183, or about four-fifths of the original number, to commence upon their fourth year; but after this age, the juvenile system acquires more firmness, and a greater degree of the vigor and experience to guard against disease. At the age of twenty-one, 7,134 survive to enter upon a more active and responsible career of life; of whom 6,302 attain to "thirty-five"—the meridian of manhood. Proceeding onward for twenty years, to the age of "fifty-five," only 4,727, or less than one-half the original number, then survive. From this age the numbers are decimated more frequently, and the vacated places of the fallen are occupied by advancing generations; till, having passed the mental and physical changes in the round and mystery of life, so graphically portrayed in the "Seven Ages" of the dramatist, a few become centenarians, and linger on the verge of life, till virtually, at the age of one hundred and six years, all have closed their earthly existence.

The table for Maryland also comprises the "Expectations of Life," or the average number of years in which the great mass of the white population live after a given present age. This arrangement of the data is justly described as that which is of the most interest to society; for it points out the average number of years in which one member of the community with another participates in the pleasures and cares of life.

An individual, for instance, on attaining his thirtieth birth-day, has an expectancy of nearly thirty-five years. At fifty years of age, the lease of time's estate (so to express the idea) is limited to a little more than nineteen years longer. The maximum expectation—52.86 years—is at the age of four in this table; in the well-known Carlisle table, it is represented to occur at the age

of five; and at six in the Swedish table. The joint expectation for two lives, as in the marriage relation, or the average period during which both shall be living, may now be determined in like manner, and also for three or more lives of given ages.

It has been remarked, that tables properly constructed from sufficient data, never differ widely from each other. For this reason, and on account of their high value, insertion is likewise given in that report to three standard European tables; from no one of which does the Maryland table differ in the comparison so much as they differ among themselves.

Indeed, the duration of life by the Maryland table is found to be almost an exact medium between the British female annuitants and the Carlisle values; which affords strong proof of accuracy. From these tabular forms for Maryland, the probabilities of life can readily be ascertained in a given case, with the value of annuities, assurances, and other reversions dependent upon lives; and, when extended to other localities, the results will eventually promote a most important national purpose, one which has long been desired—that of attaining a correct estimate of the standard of human life among different classes of population in this country.

Table of Deaths during the year ending 1st June, 1850.

	No. of Deaths	Ratio to the number living
Maine	7,545	77-29
New-Hampshire	4,268	74-49
Vermont	3,132	100-13
Massachusetts	19,414	51-23
Rhode Island	2,241	65-63
Connecticut	5,781	64-13
New-York	44,339	69-85
New-Jersey	6,467	75-70
Pennsylvania	28,318	81-63
Delaware	1,209	75-71
Maryland	9,594	60-77
Virginia	19,053	74-61
North Carolina	10,207	85-12
South Carolina	7,997	63-59
Georgia	9,920	91-93
Alabama	9,084	81-94
Mississippi	8,711	69-63
Louisiana	11,948	42-85
Texas	3,046	69-79
Florida	933	93-67
Kentucky	15,206	64-60
Tennessee	11,759	85-34
Missouri	12,211	55-81
Arkansas	2,987	70-18
Ohio	28,949	68-41
Indiana	12,728	77-65
Illinois	11,619	73-28
Michigan	4,520	88-19
Iowa	2,044	94-03
Wisconsin	2,884	105-82
California		
Minnesota	30	202-56
Oregon	47	282-82
New-Mexico	1,157	53-15
Utah	239	47-61
District of Columbia	846	61-09

Agriculture.—The great amount of labor requisite to the extraction of the returns of

agriculture will admit, at this time, of presenting but limited accounts, though to some extent, of the most important separate interests.—(See Agriculture for full returns.)

The returns of the wheat crop, for many of the western states, will not at all indicate the average crop of those states. This is especially the case with Ohio, Indiana, and Illinois, from which, especially the former, the assistant marshals return a "short crop," to the extent of fifty per cent. throughout the whole state. The shortness of the whole crop in Ohio, in 1849, is verified by returns made during the subsequent season, by authority of the legislature. The causes which affected the wheat crop in those states were not without their influence in reducing that of Western Virginia and Western Pennsylvania to some considerable extent.

Manufactures.—The period which has elapsed since the receipt of the returns, has been so short, as to enable the office to make but a general report of the facts relating to a few of the most important manufactures. If, in some instances, the amount of "capital invested" in any branch of manufacture should seem too small, it must be borne in mind, that where the product is of several kinds, the capital invested, not being divisible, is connected with the product of greatest consequence. This, to some extent, reduces the capital invested in the manufacture of bar iron, in such establishments where some other article of wrought iron predominates—sheet iron, for example. The aggregate, however, of the capital invested, in the various branches of wrought

iron, will, it is confidently believed, be found correct.

The entire capital invested in the various manufactures in the United States, on the 1st of June, 1850—not to include any establishment producing less than the annual value of \$500—amounted, in round numbers, to..... \$530,000,000
Value of raw material..... 550,000,000
Amount paid for labor..... 240,000,000
Value of manufactured articles 1,020,300,000
Number of persons employed 1,050,000

More minute particulars respecting these separate interests will be found incorporated in the tables.

The Press.—The statistics of the newspaper press form an interesting feature in the returns of the seventh census.

It appears that the whole number of newspapers and periodicals in the United States on the first day of June, 1850, amounted to 2,800. Of these, 2,494 were fully returned, 234 had all the facts excepting circulation given, and 72 are estimated for California, the Territories, and for those that may have been omitted by the assistant marshals.

From calculations made on the statistics returned, and estimated circulations where they have been omitted, it appears that the aggregate circulation of these 2,800 papers and periodicals is about 5,000,000, and that the entire number of copies printed annually in the United States, amounts to 422,600,000.

The following table will show the number of daily, weekly, monthly, and other issues, with the aggregate circulation of each class :

	No.	Circulation	No. copies printed annually.
Dailies.....	350.....	750,000.....	235,000,000
Tri-weeklies.....	150.....	75,000.....	11,700,000
Semi-weeklies.....	125.....	80,000.....	8,320,000
Weeklies.....	2,000.....	2,675,000.....	149,500,000
Semi-monthlies.....	50.....	300,000.....	7,200,000
Monthly.....	100.....	900,000.....	10,800,000
Quarterlies.....	25.....	29,000.....	80,000
	2,800	5,000,000	422,600,000

Four hundred and twenty-four papers are issued in the New-England states, 876 in the Middle states, 716 in the Southern states and 784 in the Western states.

The average circulation of papers in the United States, is 1,785. There is one publication for every 7,161 free inhabitants in the United States and Territories.

In accordance with the views expressed in the commission with which the department honored me in May last, I visited, during the three summer months, the capitals of many of the important governments of Europe, for the purpose of examining into the methods adopted for the procuring and classification of such facts as are enumerated

by those governments in their statistical investigations, in order that our own census might, when published, prove of the greatest value to ourselves, and not seem inferior to those of countries which have the credit of having paid more attention to statistical science, although they may not have made greater advances in what we esteem rational forms of government.

It seems more desirable to possess every ray of light on this subject, when considering that the present census is one of unexampled importance to ourselves and our posterity, as exhibiting our condition to the middle of a century, and illustrative of the progress of a people, flourishing beyond all

precedent, under a new form of government; one whose history and example must, as it becomes known, exert an important influence throughout the civilized world. This census, while it exhibits our progress for sixty years, with a precision and a certainty which no other country has been able to enjoy, and gives a reality to the past, unattainable with respect to any other people, discloses the present statistical history, and that for the first time, of a country embracing more than a million square miles of territory, the future destiny of which is inseparably connected with that of the original thirteen states. Not only, however, in connection with these statistical investigations, did it seem desirable to avail ourselves of any improvements introduced into the last censuses of Europe, to enable us to prepare our own great national work on the best system; but for many of the practical purposes to which statistics are applied and deemed valuable, it seems desirable to effect some arrangement by which the publication of the results of the great elementary facts among nations should be made as nearly simultaneous as possible, and classified on the same general principles, as far as the facts taken would justify; in order that, while we use every exertion to analyze society at home, we may, from their statistics, enjoy the advantage of being able to arrive at a similar analysis with respect to other nations, and that, while contemplating our own progress from time to time, we may be able to institute comparisons with the advancement of other people. Heretofore, at least, in every step of investigation, the statist in wishing to prosecute inquiries respecting different nations, touching the great elements of society, has met with the insurmountable difficulty arising from the different elements elucidated, and the diverse methods of combination adopted, which lessen the value of their labors, reciprocally, and in the absence of more reliable data, lead to the frequent use of one set of elements to ascertain the condition of some different set, producing results equally unsatisfactory to the man of science, as they are often dangerous, if made the basis of the political economy and legislation of a government.

In addition to the effort to effect a general sympathy or concert of action among nations, with reference to their periodical statistics, it has been my aim, in which I have succeeded, often in the absence of published records, to procure a knowledge of the exact condition of the people of all classes in each country visited, and learn their true state with reference to numbers, and the products of their agriculture and manufactures, their social and moral condition, the state of education, the price of la-

bor, and the practical management of the farming interests; in no case, however, relying upon information not either obtained from personal observation, or derived officially, and in a manner which can leave no doubt of its correctness. My opportunities abroad will not only enable me to effect valuable improvements in compiling our census, but it will be my aim to make the statistical facts useful to the country by forming them into a report to be supplemental hereto, the completion of which has been retarded by my other official duties.

Another object had in view, was the procuring information with reference to the manner in which the various offices in Europe, especially those connected with agriculture and statistics, are organized, and the manner in which the information obtained is made available to the government and people. To the attainment of these purposes, the few weeks to which my time limited me, and the diversity of languages among those with whom my investigations were pursued, interposed difficulties only surmounted by a zealous determination to effect the duty undertaken—one in which failure must have ensued, were it not for the official character sustained in connection with the office here, and that with which the department honored me, as its representative abroad: the one enabling me to impart as much valuable information to others as was solicited in return; the other giving facilities of intercourse, and a claim to consideration, which was never slighted by any officer of a foreign government.

In England, in addition to the free intercourse enjoyed with the officers of government connected with statistical matters, several opportunities were offered for bringing the object of my mission before public audiences; and invitations were tendered me to address the members of the London Statistical Society at its annual meeting in that city, the Society of Actuaries at Richmond, and the British Association at Ipswich, during its annual meeting, which was attended by Prince Albert, one of its members, and many of the most distinguished literary and scientific gentlemen of Great Britain and the Continent. The Statistical Council of Belgium, M. Quetelet, President, gave me a place in their Board at one of its regular meetings. On each opportunity it gave me pleasure to present a full account of the character and extent of our investigations, under the act of Congress, for taking the seventh census, to make a fair and impartial exhibit of our progress in wealth and numbers during the past ten years, and at the same time urge the propriety of mutual efforts towards the attainment of more uniform and useful statistical publications by different governments. The propriety of

this measure was felt by individuals who had made statistics a study, and the necessity for some action was universally conceded; and it affords me infinite gratification to state, that an arrangement has been made for a general statistical Congress, to be held at Brussels, (Belgium,) during the ensuing fall—a measure which has received the approbation of several of the most distinguished statistes of Europe, and from which the

most beneficial results are anticipated. Mr. Porter, of the Board of Trade, has been appointed a delegate to this Statistical Congress from England. He is a gentleman distinguished no less by his laborious researches and valuable contributions to the science of political economy and statistical knowledge of the British empire, than for the elevated position he holds as a public officer and man of letters.

CENSUS STATISTICS U. S., 1790-1850.

	1790	1800	Ratio of Increase	1810	Ratio of Increase	1820	Ratio of Increase
N. England.							
Maine.....	96,540	151,719	57.1	228,705	50.7	298,335	30.4
New-Hampshire.....	141,899	183,762	29.5	214,360	16.6	244,161	13.9
Vermont.....	85,416	154,465	80.8	217,713	41	235,764	8.2
Massachusetts.....	378,717	423,245	11.7	472,040	11.5	523,287	10.9
Rhode Island.....	69,110	69,122		77,031	11.4	83,059	7.8
Connecticut.....	238,141	251,002	5.4	262,042	4.3	275,202	5
	1,009,823	1,233,315	22.1	1,471,891	19.3	1,659,808	12.8
Middle.							
New-York.....	340,120	556,756	72.5	959,049	63.4	1,372,812	43.1
New-Jersey.....	184,139	211,949	15.1	245,555	15.9	277,575	13
Pennsylvania.....	434,373	602,365	38.6	810,091	34.4	1,049,458	29.5
	958,632	1,401,070	46.15	2,014,695	43.79	2,699,845	34
Atlantic.							
Delaware.....	59,096	64,273	8.7	72,674	13	72,749	
District of Columbia.....		14,093		24,023	36.8	33,039	37.5
Maryland.....	319,728	341,548	6.8	380,546	11.4	407,350	7
Virginia.....	748,308	880,200	17.6	974,622	10.7	1,065,379	9.3
North Carolina.....	393,751	478,103	21.3	555,500	16.2	638,829	15
South Carolina.....	249,073	345,591	38.7	415,115	20.1	502,741	18.1
Georgia.....	82,548	102,101	96.4	252,433	55.1	340,987	35.1
Florida.....							
	1,852,504	2,285,909	23.39	2,674,913	17.01	3,061,074	14.43
Northwestern.							
Ohio.....		45,365		230,760	408.7	581,434	152
Indiana.....		4,875		24,520	403	147,178	500.2
Illinois.....				12,282		55,211	349.5
Iowa.....							
Wisconsin.....							
Michigan.....				4,762		8,896	86.8
Minnesota, (Territory).....							
		50,240		272,324	442.04	792,719	191.09
South'n & West'n.							
Kentucky.....	73,077	220,955	200	406,511	63.1	564,317	38.8
Missouri.....				20,845		66,586	219.5
Alabama.....						127,901	
Louisiana.....				76,556		153,407	100.4
Tennessee.....	35,791	105,602	200	261,727	147.8	422,813	61.5
Mississippi.....		8,850		40,352	356	75,448	87
Arkansas.....						14,273	
Texas.....							
New-Mexico, (Territory).....							
	108,868	335,407	208.08	805,991	140.3	1,424,745	76.76
*California.....							
Oregon } Territories.....							
†Utah }							
Seamen in U. S. service.....							
Total.....	3,929,827	5,305,941	35.01	7,239,814	36.45	9,638,191	33.12

* The population of California is set down at 165,000 as an approximation to the real population, which may be essentially varied by complete returns. Should the returns vary from our estimate so far as to reduce the population of California 30,000, South Carolina will be entitled to a member additional, as being next above on the list of fractions. The official returns of California will slightly affect the calculation respecting the aggregate increase of the free population for the year 1850. Ratio of representation, 93,716.

† The returns of Utah have been received since the preparation of this report.

Statement of Population by Classes decennially, from 1790 to 1850, inclusive.

		1790	1800	Ratio of Increase	1810	Ratio of Increase	1820	Ratio of Increase		
Whites.....		3,172,464	4,304,489	35.7	5,862,004	36.2	7,866,569	34.19		
Free colored.....		59,466	108,395	82.2	186,446	72.2	233,524	25.25		
Slaves.....		697,897	893,057	27.9	1,191,364	33.4	1,538,098	29.10		
Seamen in U. S. service.....										
		3,929,827	5,305,941		7,239,814		9,638,191			
Total Free.....		3,231,930	4,412,884	36.4	6,048,450	37	8,100,093	33.92		
Total colored population, } free and slaves.....		757,363	1,001,452	32.2	1,377,810	37.6	1,771,622	28.58		
		1830	Ratio of Increase	1840	Ratio of Increase	1850	Ratio of Increase	Representatives of each State No. Fractions	Present No. Reps.	
New-England.	Maine.....	399,455	33.9	501,793	26.2	583,188	16.22	6	20,892	7
	New-Hampshire.....	269,328	10.3	284,574	5.6	317,964	11.63	3	36,816	4
	Vermont.....	280,652	19	291,948	4	314,120	7.59	3	32,972	4
	Massachusetts.....	610,408	16.6	737,699	20.8	994,499	34.81	11	57,339	10
	Rhode Island.....	97,199	17	108,830	11.9	117,544	35.57	2	53,828	2
	Connecticut.....	297,675	8.1	309,978	4.1	370,791	19.61	4	89,643	4
		1,954,717	17.7	2,234,822	14.3	2,728,106	22.07			
Middle	New-York.....	1,918,608	39.7	2,428,921	26.6	3,097,394	27.52	33	4,766	34
	New-Jersey.....	320,823	15.5	373,306	16.3	489,555	31.14	5	20,866	5
	Pennsylvania.....	1,348,233	28.5	1,724,033	27.9	2,311,786	34.09	25	62,602	24
		3,587,664	32.88	4,526,260	26.16	5,898,735	30.32			
Atlantic	Delaware.....	76,748	5.5	78,085	1.7	91,535	17.22	1		1
	District of Columbia.....	39,834	29.2	43,712	23.3	51,687	18.24			
	Maryland.....	447,040	9.7	470,019	5.1	583,035	24.04	6	78,307	6
	Virginia.....	1,211,405	13.7	1,239,797	2.3	1,421,661	14.66	13	14,341	15
	North Carolina.....	737,987	15.5	753,419	2.1	868,903	15.32	8	3,810	9
	South Carolina.....	581,185	15.6	594,398	2.3	668,507	12.46	5	45,933	7
	Georgia.....	516,823	51.2	691,392	33.8	905,999	31.03	8	3,598	8
	Florida.....	34,730		54,477	56.8	87,401	60.43	1		1
		3,645,752	19.1	3,925,299	7.66	4,678,728	19.19			
Northwestern	Ohio.....	937,903	61.3	1,519,467	62	1,980,408	30.33	21	12,372	21
	Indiana.....	343,031	133	685,866	99.9	988,416	44.11	11	51,256	10
	Illinois.....	157,445	185.2	476,183	202.4	851,470	78.81	9	8,026	7
	Iowa.....			43,112		192,214	345.84	2	4,782	2
	Wisconsin.....			30,915		305,191	890.48	3	21,013	3
	Michigan.....	31,639	255.6	212,267	570.9	397,654	87.33	4	22,790	3
	Minnesota (territory).....					6,077				
		1,470,018	85.43	2,967,840	101.89	4,721,430	59.08			
South'n & Western	Kentucky.....	687,917	21.9	779,828	13.3	982,405	25.98	10	54,568	10
	Missouri.....	140,455	110.9	383,702	173.2	682,043	77.75	7	84,778	5
	Alabama.....	309,527	142	590,756	90.8	771,671	30.62	7	72,218	7
	Louisiana.....	215,739	40.6	352,411	63.3	511,974	45.27	4	41,501	4
	Tennessee.....	681,904	61.3	829,210	21.6	1,002,625	20.91	10	63,396	11
	Mississippi.....	136,621	81	375,651	175	606,555	61.46	5	14,015	4
	Arkansas.....	30,388	112.9	97,574	221.1	209,639	114.85	2	3,414	1
	Texas.....					212,592		2	1,895	2
	New-Mexico (territory).....					61,547				
		2,202,551	54.59	3,409,132	54.78	5,041,051	47.86			
† California.....						165,000		2		2
Oregon } Territories.....						13,293				
† Utah } Territories.....						11,380				
Seamen in U. S. service.....		5,318		6,100						
Total.....		2,866,020	33.48	17,069,453	32.67	23,257,723	36.25	233	fractions	233

† For population of California, see preceding page.

† The returns of Utah have been received since the preparation of this report.

UNITED STATES CENSUS STATISTICS—continued.

Statement of Population by Classes decennially, from 1790 to 1850, inclusive.

	1830	Ratio of Increase	1840	Ratio of Increase	1850	Ratio of Increase	Representatives of each State No. Fractions	Present No Reps
Whites.....	10,537,378.	33-95	14,189,895.	34-7	19,630,738.	38-28		
Free colored.....	319,599.	36-85	386,245.	20-9	428,661.	10-9		
Slaves.....	2,009,043.	30-61	2,487,213.	23-8	3,198,324.	28-58		
Seamen in U. S. service..			6,100.					
	12,866,020..		17,069,453..		23,257,723..	36-25		
Total free.....	10,856,977.	34-03	14,576,140.	34-1	20,059,399.	37-61		
Total colored popula- tion, free and slaves }	2,328,642..	31-44	2,873,458..	23-4	3,626,985..	26-22		

* Added to white population.

UNITED STATES—FINANCES OF
THE GENERAL AND STATE GO-
VERNMENTS—PUBLIC DEBTS.

United States.....	\$64,228,238
Maine.....	979,000
Massachusetts.....	6,091,047
New-York.....	23,937,249
New-Jersey.....	62,596
Pennsylvania.....	40,424,737
Maryland.....	15,900,000
Virginia.....	14,400,507
North Carolina.....	977,000
South Carolina.....	3,622,039
Georgia.....	1,903,472
Alabama.....	10,385,938
Mississippi.....	7,271,707
Louisiana.....	16,238,131
Texas.....	11,050,201
Arkansas.....	3,862,172
Tennessee.....	3,337,856
Kentucky.....	4,531,913
Ohio.....	19,173,223
Michigan.....	2,849,339
Indiana.....	6,556,437
Illinois.....	16,612,795
Missouri.....	956,261
Iowa.....	55,000
Total, 1850.....	\$275,480,676
Total, 1843.....	198,818,736

Increase in seven years..... \$76,661,940

This shows an increase of about thirty per cent. in seven years; and returns for 1851 will show an addition to the public indebtedness of 1850 of more than forty millions of dollars. New-York, Massachusetts, Virginia and North Carolina, have granted, or are about granting their credit to works of internal improvement, by which the debt of each will be largely increased. We must add to this enormous amount at least seventy-five millions of dollars for the debts of cities and counties in all sections of the country, for which bonds are issued. This makes the indebtedness of governments, great and small, in the United States, at this moment, nearly four hundred millions of dollars. The debts of rail-road and canal companies in the United States, for which bonds have been issued, and are floating about the money markets, amount to full eighty millions of dollars. The banks have been expanding rapidly, and every month adds millions to their loans and discounts. The loans at the

present time of the banks cannot be less than four hundred and fifty millions of dollars. The reports published by the Secretary of the Treasury make the aggregate \$412,733,004, and many of the returns included in that aggregate, were dated four and six months previous to January, 1851. The aggregate amount of bonds of incorporated companies—of the general and state governments—of cities and counties—and of paper promises to pay held by the banks, cannot be much below *one thousand millions of dollars*, as shown by the annexed table:—

PUBLIC AND PRIVATE INDEBTEDNESS—1851.

General and State Governments, 1850.....	\$275,480,076 15
General and State Government in- crease since 1850.....	40,000,000 00
Bonded debts of Cities and Counties, 1851.....	75,000,000 00
Bonded debts of Railroad and Canal Companies, 1851.....	80,000,000 00
Loans and discounts of Banks in the U. S., 1851.....	450,000,000 00
Total, 1851.....	\$920,480,676 15

This is independent of the immense amount of paper floating about the country, in the hands of individuals. The amount included in the above table comprises the bonded debts of the various governments and incorporated companies, and the amount of paper discounted in all the banks. We have made no attempt to estimate the total extent of credits in existence. It is probably double, at least, the above aggregate. The great speculative years, 1835, 1836 and 1837, could not compare with the present. We are at this moment in a more expanded condition than ever before, and there are more than sixty millions of bonded securities for the construction of rail-roads, canals, plank roads, and other works of internal improvements, ready to be negotiated at some rate. Individuals have by no means been behind corporations or incorporations. Every one that had any credit has been running into debt. All sorts of extravagance is the order of the day. Five, ten and fifteen dollars are paid for a ticket to a concert, without a second thought. Three thousand dollars for a car-

riage and pair is considered nothing. One hundred thousand dollars for a house up town, and furniture, is not considered unreasonable, and everything else at the same rate, is paid by those who have more credit than capital, more pride than brains. The people of the South have, in consequence of the high prices paid for their staple product, been enormously extravagant, and have, notwithstanding the great increase in the value of their crops, exceeded their incomes, in expenditures, full as much as in any previous year. The success of Jenny Lind's concerts shows this. In the face of this artificial, inflated state of things, what would be the effect of a great fall in the price of cotton, or the falling off in the receipts of gold from California? That both of these events will be realized, we have not the slightest doubt. The enormous prices which have been paid for cotton during the past year will stimulate cultivation, and the probability is, that before a twelvemonth elapses, the raw material will be nearly as low as ever it was. We have taken the cream off the gold mines of California, and, while the supply of dust will be largely reduced, the expansion of credits here, which has been carried on upon the basis furnished by California, must go on until it is arrested by a wide-spread revulsion.

UNITED STATES.—COMMERCIAL NAVIGATION OF, AND GREAT BRITAIN.—We are indebted for the following extract to Mr. Kettell's invaluable "United States Economist:"

The navigation laws of Great Britain, which were originated in the middle of the seventeenth century, and continued in force down to the peace of 1815, have now, since three years, been abolished in respect to the foreign trade. It was generally contended, and by many believed, that the commercial greatness of England was due, to a considerable extent, to the operation of those laws, rather than to the enterprising and commercial character of her people. The singular position of their island home, which made navigation the only means of communication with their neighbors, and eminently favored its development, inasmuch as that no wind can blow from any quarter of the compass, but that it is fair for the arrival and departure of some of England's mercantile marine; her

possession of oaks, iron and mechanical genius, enabled her to build, without competition, those vessels which her enterprise and necessities sent into all seas. With these advantages, it was inevitable that England should become the mistress of the seas; and to ascribe the results of those combined circumstances to the operation of law, was more worthy of a dark age than of the enlightened present. Soon after the government of Cromwell invented those laws, Colbert, in 1664, constructed the first general tariff for France, and the principles of that tariff were more strictly enforced by succeeding ministers, especially in relation to navigation, down to the present day. As long as all the countries out of Europe were dependencies of European governments, and exposed to the operation of their laws, but little progress was made in that healthful rivalry which operates to the benefit of general industry. The separation of the United States from Great Britain freed them from the operation of her laws, and compelled their relaxation. Even statesmen were not too stupid to see the necessity of modifying a state of things which compelled a British vessel to make a voyage across the Atlantic in ballast, one passage, passing a United States vessel loaded, thus charging two freights upon every cargo carried, without benefiting the vessel; consequently, the laws were for the first time modified, and United States and British vessels placed upon an equal footing. In 1818, the United States passed a law virtually abolishing navigation laws in favor of any nation which should adopt a similar policy. The inevitable progress of commerce, deepening its own channels, at length compelled England, in time of famine, to suspend her navigation laws, in order that vessels of all nations might bring her food. Holland and Belgium were compelled, by the same necessity, to do likewise, and that experiment led to the final abrogation of the English navigation laws, in 1849, consequently, bringing into force the United States law of 1818. France alone remains in her former position. The results of the exclusive policy of France, and of the liberal policy of the United States and Great Britain, are seen in the following table, which shows the tonnage which entered each country in 1849 and 1851, distinguishing the foreign from the national:

TABLE SHOWING THE TONNAGE WHICH ENTERED EACH COUNTRY, DISTINGUISHING THE NATIONAL FROM FOREIGN FLAGS.

	1849.		1851.	
	National	Foreign	National	Foreign
Great Britain.....	4,390,375	1,680,894	4,388,245	2,599,988
France.....	837,345	1,049,946	866,143	1,312,411
United States.....	2,658,325	1,710,515	3,054,349	1,939,091

The exclusive policy of France has not promoted her interests. Of the whole tonnage which enters France in any one year, only forty per cent. is the property of French citizens. In both England and the United States, the reverse is the case. It is doubt-

less the case that the genius of France is far less maritime than either that of England or of the United States; but the figure shows that laws can do but little towards changing the character of a people. As between the United States and England, both possessed of maritime aptness, it was fiercely contended that the superior capital and general resources of the latter would enable her, on a footing of equality, to drive the United States vessels out of the trade, at least the international trade.

It was supposed that in what was called

the triangular voyage between the United States, British West Indies and England, the vessels of the latter would have such advantages as would ruin American tonnage. We may now, from official documents, compile a table of the British and American tonnage which entered the United States from each country of the world at two periods. In this table, it will be seen that the operation has been altogether in favor of the United States, the tonnage of the latter showing an increase from almost every country.

BRITISH AND UNITED STATES TONNAGE ENTERED UNITED STATES.

From—	1849.		1851.	
	British	U. S.	British	U. S.
Great Britain.....	551,162	500,769	501,894	643,299
Canada.....	537,697	906,813	514,383	1,013,275
North American Colonies.....	314,805	120,867	361,564	62,418
British West Indies.....	46,686	63,523	39,894	58,353
British East Indies.....		20,529	2,508	29,907
Total G. B. dependencies.....	1,450,350	1,712,501	1,420,243	1,807,252
All other countries.....	32,357	945,820	140,022	1,247,057
Total tons.....	1,482,707	2,658,321	1,560,269	3,054,309

Thus we observe that the entries of United States tonnage from Great Britain increased 42,530 tons, but British tonnage decreased 49,268 tons. The same in respect to Canada and the British East Indies. From countries

other than British, the trade has been virtually monopolized by United States vessels.

If we compare the progress of tonnage in the foreign trade of the United States and Great Britain we shall have results, as follows :

TONNAGE OF THE UNITED STATES AND GREAT BRITAIN, ENTERED IN EACH YEAR.

	United States		Great Britain	
	American	Foreign	British	Foreign
1834.....	1,074,670	568,052	1,996,930	648,911
1835.....	1,352,653	641,310	2,108,492	732,886
1836.....	1,255,384	680,213	2,250,173	882,194
1837.....	1,299,720	765,703		
1838.....	1,408,761	604,166		
1839.....	1,491,279	624,814	2,756,533	1,201,935
1840.....	1,576,946	712,363	2,807,367	1,298,840
1841.....	1,631,909	736,444	2,900,749	1,081,380
1842.....	1,510,111	732,775	2,680,838	974,768
1843, 9 mos.....	1,143,523	534,752	2,919,528	1,005,894
1844.....	1,977,438	916,992	3,087,437	1,143,896
1845.....	2,035,486	910,563	3,699,853	1,353,735
1846.....	2,221,028	968,178	3,622,808	1,407,963
1847.....	2,101,359	1,120,346	4,238,056	1,852,096
1848.....	2,393,482	1,405,191	4,020,415	1,559,046
1849.....	2,658,321	1,710,515	4,390,375	1,680,894
1850.....	2,573,016	1,775,623	4,078,544	2,035,152
1851.....	3,054,349	1,939,091	4,388,245	2,599,988

The year 1839–40, and in 1847, the increase of foreign tonnage entering Great Britain was large, in consequence of the great importation of corn, and these have, since the last famine, continued at an enormous figure, favoring the employment of the tonnage of the corn countries. In the above period of fifteen years, however, the entries of American tonnage in the United States

have tripled, while British tonnage in England has little more than doubled. The ratio of foreign tonnage entering England has increased faster than foreign tonnage in the United States, because American vessels are included in the former. The tonnage of the United States, in its several employments, has progressed as follows :

UNITED STATES TONNAGE.

Employed in—	1840	1850	1851
Foreign trade.....	752,838.....	1,386,754.....	1,482,273
Foreign steam.....	.....	44,942.....	62,390
Foreign whale.....	136,926.....	146,016.....	181,644
Coasting vessels.....	946,480.....	1,273,994.....	1,333,108
Do. under 20 tons.....	32,030.....	42,027.....	45,654
Do. steam.....	198,184.....	481,804.....	521,216
Cod fishing.....	67,926.....	85,646.....	87,475
Do. under 20 tons.....	8,109.....	8,160.....	8,140
Mackerel fishing.....	28,269.....	58,112.....	50,539
Whale do.....	.....	.....	.....
Total.....	2,170,762.....	3,527,455.....	3,772,439

In the eleven years here embraced, the sailing tonnage in the foreign trade has doubled, and over sixty-two thousand steam tons have been added. The coasting sailing tonnage, in the same time, has increased forty per cent., and the steam two hundred per cent. The home fisheries have shown no great increase; in fact, precisely that interest

which alone has received bounties from the government, is the only one that has not increased. This large increase in tonnage has not been without its influence upon freights, but these have not been sufficiently depressed to prevent the construction of vessels.

The following table shows the progress of building for the foreign trade:

REGISTERED TONS BUILT AND DISPOSED OF.

	Built	Sold to Foreigners	Condemned	Lost	Increase
1846.....	58,274.....	10,931.....	4,242.....	22,118.....	20,981
1847.....	78,849.....	13,907.....	5,096.....	22,078.....	37,766
1848.....	135,885.....	11,079.....	3,602.....	26,872.....	94,332
1849.....	99,130.....	12,506.....	7,109.....	23,606.....	55,908
1850.....	157,612.....	13,468.....	4,666.....	23,724.....	115,753
1851.....	165,849.....	15,246.....	3,806.....	23,149.....	123,647

The increase in the effective tonnage has been very large. The high freights of 1847 stimulated a great activity in the ship-yards, which subsided in the following year, to be renewed with greater vigor in the past two years. The coasting tonnage has shown the same features, notwithstanding the continual increase of competition from the rail-roads, a competition which, in England, has seriously reduced the coasting tonnage. If the coasting trade of England had been thrown open, like the foreign trade, the diminution in its movement would have been ascribed to that; but it had only the rivalry of rail-roads, and these have been effective. In the United States, great as has been the activity of the rail-road traffic, it has not, up to this time, encroached upon coasting tonnage.

UNITED STATES—TARIFFS—INTERNAL IMPROVEMENTS—COPY-RIGHT, AND PATENT RIGHT.—

If the American government be, as it undeniably is, one of limited and circumscribed powers, it is yet in full possession of all the high and essential attributes of sovereignty. It is a nation, in every sense that the term is understood to imply equality and independence—the power of demanding rights—of punishing wrongs—of maintaining rank, influence and position among contemporary governments. Such, in all its external relations, is the government which it was the intention of our fathers to establish, and such it was their happy fortune as well as their consummate wisdom to secure

in the terms of the federal compact—a compact which brings home to us and guaranties in all times liberty, independence, power, and all that, as citizens and as men, it is our glory to perpetuate.

In its internal relations, however—its relations to the integral and constituent parts, the states—the federal government presents a new and different aspect. Here, in nice equilibrio, are adjusted its limitations, its checks and its compromises. Here, if you please, its weakness; but here, beyond all question, its strength. Here interests, in many respects dissimilar and discordant; habits of thought, feelings, prejudices and passions, as numerous and distinct as the great subdivisions of a country, embracing every variety of soil and climate, can make them, are to be conciliated, harmonized, and blended firmly together for purposes of an exalted public good. Here is to be found the great arena where the battle of America must be fought—America for or against herself—federation against consolidation—chartered rights against cruel, heartless and inexorable majorities—liberty against power—a constitution against the omnipotence of parliament.* On the outermost rank of the republic its banners may be

* De Lolme, in his remarkable work upon the English Constitution, asserts boldly, that it is a fundamental principle with the English lawyers, that Parliament can do everything but make a woman a man, and a man a woman. P. 134.

hung in triumph—the pressure will never be thence.

With what extreme caution did the sages who presided over the infancy of our liberties proceed, when engaged in the delicate trust, if we may be allowed the expression, of consolidating powers taken from the individual states in the hands of representatives from the states at large. What searching scrutiny, what acute sensitiveness, what jealousy, what prescience, and yet what self-sacrificing and noble patriotism. They were not men to shrink from the high responsibilities of their times. No hand of theirs could forge a chain of iron to be clanked over their graves, with maledictions, by their children. In the stormy times of the Revolution, the love of liberty had become with them a living and an active principle; and the same heroic devotion which led them up to the cannon's mouth in its cause, led them, when that cause was won, into the council-chamber, where alone it could be perpetuated. They adopted a constitution as perfect, perhaps, as any mere human instrument could ever be—a constitution in which they neither maintained nor lost their identity—in which a government was formed, and in which states were not annihilated—states under all the restrictions which the general welfare and happiness demanded; but yet individual, equal, free, with rights guaranteed, and powers in every respect adequate to administer their laws and preserve their liberties. A central and consolidated government was not within the contemplation of these men. A mere association of states was equally distant from their thoughts. But a combination of the two principles was the happy medium—the principle of consolidation to the extent that power demanded, and the principle of association to restrict its abuses. It was proclaiming a truth in political science—discovered, illustrated, and taught for the first time in the New World. Does not that truth rebuke alike the domination of centralism and the licentious extension of state power. As our fathers fixed the compact, so in God's name let it stand.

Experience, as well as reason, laughs to scorn all idea of human infallibility, all nations of perfection existing in the results of the skill or wisdom of man. Time exhibits the commentary most mortifying of all upon individual or national pride; and Xerxes scourging the rebellious waves of Hellespont, forging for them fetters, or binding Athos' towering mountain down at bidding, for the passage of his army, was every whit as reasonable, as modest, and as wise a man as the author of the immutable laws of the Medes and Persians; or even as good old John Locke, who, in the inexperience of great theoretical knowledge, congratulated himself

on having achieved a miracle of perfection in law-making, when he presented to Lord Shaftsbury an unchangeable and immortal constitution for his Carolina colony—a constitution which, in twenty-two years, had perished from its utter impracticability, leaving scarce a wreck behind! The bed of Procrustes may be applied to the physical, never to the moral and to the intellectual man. The great law of social existence is progress.

The constitution of the United States provides for stability, but then in meek humiliation and conscious infirmity, the framers of that instrument prepared and provided for change. Times and circumstances may alter the position and relation of the states to each other—may develop new principles of political order—may engender new and unexpected combinations, and defeat the aim of previous ones; a dangerous weakness or a dangerous power may be detected in some novel contingency, and demand a remedy; might may press too much upon right; barriers prove unavailing to prevent or arrest encroachment, and national disorganization be threatened—the element of safety is happily placed within the constitution itself; the constitutional power of amendment—the *vis medicatrix* of the sacred instrument, rendering it capable of any extension which the necessities of times may demand, and of an adaptation to any state of events within the power of human wisdom to conceive. This amending feature, under all its limitations, is one which recognizes in the people the sacred and inalienable right of changing, peaceably and without revolution, their government and their laws; for of that higher right of revolution we make no mention.

If, however, there be a mode of change known to the constitution, and but one, experience has certainly developed another and a far easier one—easier, because dependent upon the wills and caprices of a comparatively small body of men, but as perilous as it is easy—the *method of construction*. The terms of every compact must be understood before the compact can be applied; and this understanding of the constitutional compact leaves abundant scope for doubts and difficulties that are real, as well as creates those that are not. An expression may have been clearly intended in one sense, and yet admit of a different one. Another may be general enough and indefinite enough to admit of several senses, and the one intended by no means obvious. A power granted for one purpose may be wrested for another. A power delegated for the sake of a higher one and subsidiary to it, may come to be regarded as independent and substantive, or the reverse may be the case. All of these difficulties have already been raised, discussed, and acted upon, over and

over, until the doctrine came at last to be laid down by the highest judicial authority in the Union—the Supreme Court—in the memorable case of *McCulloch v. the State of Maryland*, that the sense of a majority of Congress, long acquiesced in, fixes the construction of a doubtful or ambiguous clause of the constitution.* What is this, in fact, but opening a wide door to innovation, and prostrating the government, bound hand and foot, before Congress, to be dealt with hereafter according to its tender mercies? In vain shall we rally around the constitution when its heart has already been eaten out by the abuses of construction. Our best wisdom will far rather be to abrogate altogether the whole instrument, so that men shall no longer be deceived by names.

Were we to trace the history of parties in our country, it would be discovered that they have been formed and sustained less in relation to the expediency than the constitutionality of political measures. The contest has not been in executing the "behests" of government, to use an expression of Mr. Webster's, but in determining what those behests are. Here the lines of demarcation are boldly drawn, and the champions of the letter and the spirit of the constitution assume their respective stands. The severe doctrines of what may be termed the states' rights school, or, more properly, the strict construction, have led them to contest every inch of power—to analyze the constitution clause by clause with microscopic vision—to deny every power not explicitly granted or absolutely necessary for executing specific grants—to interpret according to the most simple, easy and natural rules, without force or artifice, and to throw into the balance of the states the advantages of every doubt. Their opponents, on the other hand, contend for what they call a more liberal principle. In their apprehension, the constitution possesses a degree of flexibility which admits of its being applied to cases not perhaps within its original contemplation, or within its letter; but yet bearing some kind of analogy more or less remote to cases of an unquestioned nature. The letter they hold (with the inspired one of other times) kills, but the spirit maketh alive. Impressed fully with the magnitude and importance of the general welfare, they have taught themselves to regard all other welfare as of minor importance. They have their own idea, too, of that general welfare, and certain vague notions of nationality, induced by a study of contemporary governments, without having marked sufficiently the idiosyncrasy of their own. The eyes of this class are forever fixed upon the federal head, with only an occa-

sional furtive glance at the states; and they regard the strongest concentration of powers in the one case as of far less mischievous tendency than the imbecility, distraction, and disorganization which may result from a too great extension of powers in the other. In a word, the one party would restrain the states for the sake of the government, and the other the government for the sake of the states. In effecting this, all the ingenuity and skill of construction is resorted to, of which a written compact, imperfect as every such instrument must be, is susceptible. We say imperfect, though we cannot concur to the full extent with the late attorney-general, Mr. Legare, who, in one of his earlier articles in the old *Southern Review*, made this unavoidable imperfection, and the attendant evils of construction, a ground of objection to all constitutions, and particularly to ours, where his own nice and discriminating mind, aided by the light of study and experience, detected much imperfection. The effect of a written constitution, said he, interpreted by lawyers in a technical manner is to enlarge power and to sanctify abuses, rather than to abridge and restrain them.* Lord Eldon is said to have defied any man in England to frame an act of parliament through which he could not drive a coach and six!

Now, we have no inclination to take sides with either of these great divisions of party, and buckle on our armor for a conflict which belongs to another arena, and would be clearly out of place in this. In the first place, we are not, and never have been, a partisan, as that term has now come to be generally understood; and, in the next place, were we to rush into the field ready armed, as God judges us, we should be at a loss to determine under the banners of which of the two great parties which now distract the country to take our stand. It would be a trial of virtue, which of the two evils to choose, if either of them must come to us with all its odious concomitants of denunciation, vituperation, proscription, demagoguism and ignorance. We have yet to learn the art of brow-beating an opponent, of flattering and fawning upon the powerful, of trampling under foot the weak, and grievously deceiving and disappointing the people. We have been too much accustomed to establish our "orthodoxy" by reason and by argument, ever to desire the other method of "blows and knocks," ultraism, domination and fero-

* Legare's Writings, Vol. II., p. 124. Mr. Legare adds: "We have been so much accustomed to talk in a high-flown strain of the perfection, the faultless and unalterable perfection of our institutions, that we were beginning to think that everything had been done for us by our predecessors; and that it were impossible to mar their work by any errors of doctrine, or any defect in discipline among ourselves."

* 4 Wheaton, 316; we may, perhaps, state the position too strongly, but it is clearly deducible from the course of argument adopted by the court.

city. That precious morsel of wisdom left us by rare old Governor Morris, in his description of party, has worked its way down too deeply into our constitution for this—party, whose spirit is like the “velvet paw of a puss, soft, so long as she purs with pleasure; but let the meanest little mouse of an opposite party peep at the veriest paring of an office, away jumps the cat, her paws extended, her eyes flashing fire.” From all of this, we would piously ejaculate, Good Lord deliver us! We claim one badge of distinction only, and that is, to be a REPUBLICAN. To be preserved through life in this high estate, unswerved by the corruption of power or the intrigues of demagogues is the noblest prayer which an American heart can utter.

If ever there was a country where true patriots should be prized it is ours, for they are greatly needed amongst us. Not that we apprehend danger from the enlightened and honest of any party or political creed, however heretical. There will be safety even with these, for Coriolanus with a hostile army at the gates of his native Rome, will find his strong heart fail him despite of the bad counsels he has followed. Not that we fear the states' right hand man, who watches like Cerberus over the constitution, or him who would restrict the states to the least amount of power consistent with their separate existence. Where both of these unite in a fearless devotion to the Union, and in an intelligent appreciation of its nature and advantages, the peril will continue afar off. But there are those that we do fear. We fear the restless disorganizer—the man without ability to comprehend the admirable and exquisite machinery of our system, or without principle to regulate his aspirations. We fear the ignorant and arrogant innovators, whose sole prospect of influence must arise out of the disorders of society which they create, even as dead and putrid bodies seek the surface when the waters are disturbed. We fear the selfish and the mercenary, who would traffic with government as a matter of merchandise, and carry it in their pockets upon 'change were it possible to ensure the best bargain for it there. The idea of government with these men is connected more with their purse-strings than with their hearts—a “mess of pottage” would be an ample equivalent for it, and “thirty pieces of silver” an enormous recompense. Instigated by their interests they would deem deserving of a civic wreath the achievement of driving Lord Eldon's coach and six through the most precious clause of the constitution. The last class we fear are the innocent and well-meaning ignorant, and their number is perhaps the largest of all; these for whom Mr. Benton declared but lately in the Senate, “he made great al-

lowance.” But ignorance, he continued, ought to be docile and surrender on conviction—though, unhappily, we know too well that in its very nature it is confident, reckless, and overbearing. Give us no government at all rather than deceive and mock us with the name of government, if such men are its administrators. We might far rather be resolved into a state of nature again, where there would be better prospect of preserving our liberty and our rights. In that state, at least, we can discover the approaches of danger, and prepare to resist it with the power which God has given us.

It does not form a part of our plan to consider in detail the various and complicated questions which have arisen under the constitution, and given occasion, at different periods, to angry and protracted discussions in the country. We might speak of the bank, the embargo, the alien and sedition laws, the control of militia, and the acquisition of foreign territory—questions which may be conceived as now at rest, or, at all events, as of minor importance to others which we are to discuss—viz.: those of *internal improvement and protection to home industry*. These last overshadow all the rest, appertaining as they do to those high attributes of sovereignty which touch us at an infinite number of points, and rouse into sleepless activity a thousand interests—the revenue raising and the revenue expending attributes of government.

There has ever been in our country a very strong party disposed to extend the powers of the federal government, so as to include the cognizance of matters of mere internal improvement where these have seemed of more than local interest. They have grounded their faith upon different clauses of the constitution, but principally upon that which gives to Congress the right of providing for the common defence and general welfare. On several occasions this party have succeeded in persuading Congress, and obtaining appropriations, though in others their purposes have been thwarted by the exercise of the President's veto. Chancellor Kent somewhere remarks, that the weight of Executive power has been thrown, during a greater part of our history, into the opposite scale, but that, from later indications, he regards the pressure in that direction as giving way. If this be true, the last barrier will be removed, and the struggle here between power and its limitations end; for we are clear that for some time back, and now more particularly, a majority could be commanded in either branch of Congress to sanction almost any scheme of internal improvement which might be presented. The temptations to this are too powerful to be resisted, and would be so, we fear, were the constitutionality of the measure much more

questionable than it is. Scarcely a single state in the Union that has not some pet scheme of improvement at home which would gladly be prosecuted by drafts upon the government coffers. Some of these schemes are too vast for the unaided or exhausted resources of the states, and they look wishfully to the broad shoulders of Hercules, at Washington, and implore earnestly his aid. They become more and more clamorous as their necessities are pressing, and nothing, we believe, can now satisfy them short of a full and hearty response to their demands. We pass no opinion ourselves—the conclusion having been irresistibly forced upon us by the progress which things have taken, that if the power to conduct improvements be not in the constitution, it is one of the most dangerous limitations of that instrument, as the limitation will result in its speedy and inevitable infraction.

We had an opportunity last winter, while in attendance upon the Memphis Convention, to mark the strong hold which a conviction of the duty and power of government, in relation to internal improvements, had taken upon the minds of delegates from all the valley country to the Gulf, and from a portion of the seaboard. While the meeting of this important body was in agitation, one of the most important ever convened in the Union, the press was busied with suggestions in relation to its objects, and with discussions of the various matters likely to be introduced. We examined with much interest these comments, from whatever source they emanated, as one of the best possible tests of popular sentiment. We discovered a surprising unanimity among them all when the point was whether Congress should act in the matter; but how far Congress should go—for, indeed, how far Congress had the right to go was very little agitated—was quite a different thing. The point of divergence existed here, and a detail of all the particular schemes urged upon the convention, from the magnificent ones of the aspiring city journals, down to the humble suggestions of the remote village gazette, would furnish one of the most curious and striking pictures that could be well conceived. The wisdom or the honesty of these views we did not then consider, nor do we now. The fact itself is sufficient for our purpose in showing the extensive prevalence obtained, and the hearty sympathy excited, by the doctrines of internal improvement. The first, and perhaps the greatest difficulty which the convention had to encounter, was the proper disposition of this mass of crude material urgent for a place upon its tables. To have admitted without rule, and acted upon every proposition, would have been giving way to a wanton spirit whose excesses must entirely have defeated the purposes of the meeting. The position of the body, too, was peculiar. The fear of

political influences had been strongly felt, and some reluctance manifested toward it upon that account. A pledge was, however, given that party questions should not be touched, and, upon the faith of this, men of all political creeds waived their scruples, and came together to deliberate upon measures upon which they were agreed. A memorial to Congress being in contemplation, an effort was made in the face of some opposition to concentrate the energies of the convention upon certain purposes whose constitutionality admitted of the least possible doubt. How far the effort was successful, we have elsewhere endeavored to show. We shall now see the fate of the memorial itself, and consider the doctrines of the report by a committee of the Senate, to which it gave occasion.

Mr. Calhoun, the author of the report, has long been known to the people of the United States as a statesman of the strictest and severest school of construction. For at least a quarter of a century he has been at the head of that school. His opposition to the bank, to the tariff, and to internal improvements, has been bold and uncompromising. The presence of such a man in the chair of a convention like that at Memphis excited no little interest. It was considered that his own peculiar views must either be compromised or come into direct collision with all around him. We well remember the anxiety and the solicitude of his friends upon the occasion. We shall never forget the deep burst of approbation and applause which rung through the hall when he made from his seat the remarkable and unexpected declaration, that the Mississippi and its great tributaries were to be regarded as an "internal sea," and as much entitled to the protection and care of the federal government as the Atlantic coasts. The effect was electrical. In many places it was stated confidently that Mr. Calhoun had struck his flag, and gone over to the side of internal improvement—though he disclaimed anything of the kind. In South Carolina, so intense was the feeling, and so evident the fear of defection, that, though re-elected by the Legislature, then in session, to the Senate, Mr. Calhoun's course was much and strongly animadverted upon. A strong disposition was even evinced to pass resolutions which, under the circumstances, would have been equivalent to *instruction*—a course of conduct contrary to the general policy and doctrines of that state, evinced in its refusal to instruct a senator several years ago when he was clearly misrepresenting her.

The report upon the memorial preserves the consistency of Mr. Calhoun's views with those he has hitherto advanced, but at the same time furnishes him an opportunity for a more full declaration of them and their legitimate deductions. Age and experience have modified little his earlier opinions. The only novelty discovered in the report is the mas-

terly manner in which he has vindicated the rights of the great arteries of our domestic commerce to be considered as standing upon other ground than that of dependence upon the states. The effort here strikes us as being equal to the very highest intellectual achievements of his life, and the whole report presents one of the most profound and ingenious discussions of the constitution, in its most complicated and perplexing features, that it has ever been our fortune to meet with. Wrong or right, it must be regarded as an admirable document; and whatever men may think of the author and of his doctrines, and however we may differ with him upon certain points ourselves, we can all unite upon common ground here, and yield the highest possible applause for the high stand that he has taken in relation to the Mississippi and its tributaries, already the arteries of the trade of so many powerful and growing states.

The report opens with some reflections upon the trade of the valley, and the danger to which that trade is subjected in its transit to a market. From a population of 200,000 in 1790, the West had grown up to a population of nearly 10,000,000 in 1846. From a tonnage of 6,500 in 1817, it has reached at last to 161,000 tons. The whole commerce of the Mississippi and its tributaries amounts annually now to the enormous sum of \$300,000,000, equaling the whole exports and imports of the United States taken together; and this, though great, is but the beginning. "Looking beyond to a not very distant future, when this immense valley, containing within its limits 1,200,000 square miles, lying in its whole extent in the temperate zone, and occupying a position midway between the Atlantic and the Pacific oceans, unequalled in fertility and the diversity of its productions, intersected in every direction by the mighty stream, including its tributaries, by which it is drained, and which supply a continuous navigation of upward of 10,000 miles, with a coast, including both banks, of twice that length, shall be crowded with population, and its resources fully developed, imagination itself is taxed in the attempt to realize the magnitude of its commerce."

And how has the safety of this great commerce been provided for, and what prospective arrangements can be made to keep pace with its advance? Is this trade at the mercy of the states, or can Congress, under the constitution, one of the objects of which, at its origin, was the protection of commerce, legislate for it to the extent that it now legislates for our foreign trade? Has anything been done for this commerce at all, and in what condition is it now? The report declares the means of accurate information to be meagre in the extreme. Taking as a basis of calculation a St. Louis memorial, and supposing the losses of steamboats in the trade of

that city to be the mean average of losses upon the river generally, the total annual average loss would be about $11\frac{1}{2}$ per cent. upon the whole number of western steamers, 8 per cent. of which being occasioned by snags, rocks, and logs, susceptible of removal. The money value on boats and cargoes annually lost is \$2,601,200, whereof \$1,820,200 is from snags, etc. Taking the rates of insurance (from 12 to 18 per cent.) into calculation, the lowest would indicate a loss annually of \$3,600,000 on the estimated amount of the commerce of the river, to make no account of the frightful loss of life.

Whence arises, then, the sacrifice of the property and lives of the population of this vast region? Is there a remedy to be applied, and who shall apply it? This is the great question. Dismissing entirely from consideration the losses incident to sheer neglect, or criminal ignorance and rashness, which legislation might in some degree obviate, there are other perils susceptible, perhaps in a much larger degree, of removal, and these result from the peculiar character of the rivers, and the impediments by which their navigation is at all times impaired and endangered. Can these impediments be removed, and by whom? Have the states interested the power, and is it their duty under the constitutional compact to carry it into execution, or is it one of the legitimate functions of the general government? If the latter, do the ability and the duty extend to all rivers indiscriminately, and under what clause or grant of power in the constitution can they be found? These are the interesting points to which Mr. Calhoun's mind at once directed itself, and we shall follow some of the steps in the reasoning of his luminous exposition.

Appropriations have been made, from time to time, for the improvement of the Mississippi and its great tributaries. Under what grant of power is not so evident. The most usually understood grant is that of laying and collecting taxes, duties, imposts, and excises—to pay the debts and provide for the common defence and general welfare of the United States. Does this grant of power admit of a legitimate extension to the case before us? Does it delegate to Congress an independent power, to be exercised at discretion, or is it not subordinate to other powers specially delegated, and expressive of the mode of carrying them into effect? Is there any other "common defence and general welfare" except that which the constitution expressly defines, and is not the instrument explicit in stating what shall be deemed so far common and general as to attach the jurisdiction of the federal government rather than of the states? Shall we go beyond this plain limitation, and assert broadly that Congress has uncontrolled power in every case where matters of a common and general character are concerned, and this without any other authority than the

clause of the constitution we are considering? Could a government be conceived of more unlimited and omnipotent than ours would be, if it may thus sweep into its bosom every object of legislation at its sovereign will and pleasure? Is there no other limitation upon the power of Congress to "lay and collect taxes," etc., but its own understanding of what the "common defence and general welfare" of this government demands? Could any man in his senses suppose, in this state of things, that we were governed by a written constitution, or that the Congress of the United States was a single degree removed from the Parliament of England?

Mr. Calhoun rejects with indignation the course of reasoning which would lead to such conclusions. He adheres to the old doctrine of strict construction, and deems it impossible to justify the appropriation of a single dollar of the public money for any other purposes than those expressly stated in the constitution, or clearly deducible from them; in neither of which classes can the stupendous power of conducting internal improvements systematically be found.

By what right, then, have moneys been expended upon the Mississippi and its great tributaries, short of an absolute assumption of power and an infraction of the constitution, and by what right can they ever be appropriated again? The answer is plain, and is given in a simple sentence in the report—by the chartered right of Congress to "regulate commerce among the states;" a right without which our government, like that under the old articles of federation, must languish and fall into speedy and hopeless imbecility.

What is this right to regulate commerce among the states, and how far, in carrying out these regulations, may the rivers of our country be brought under the control of Congress, to the exclusion of the states through which they pass? The point is again a delicate one.

The constitution grew out of the defects of the articles of confederation, in force during the Revolution, and for some time after. One of the most conspicuous of these defects was the power reserved by the states of regulating their commerce with each other. It was discovered that the evil had become a crying one, and was sapping the very life-blood of the Union. The states were but too happy to surrender this power, and lodge it effectually in Congress, to be exercised in the same manner and to the same extent that they had exercised it themselves. What was their understanding of the power to regulate commerce among themselves? Their acts of legislation prior to the adoption of the constitution, evince that this regulation was extended to navigation as well as to trade—to the establishment of lighthouses, buoys, and public piers. The same construction was put upon the power by Congress at its very

first session, and that construction has been preserved to this day. The power to regulate commerce among the states is not the power to regulate the internal commerce of a state, but the commerce of states, as states, with each other. It was particularly intended to apply to the exposed condition of the Atlantic coast, and to protect the commerce of the country, mainly, if not entirely, at risk there. The American states were at that period wholly eastward of the Alleghany Mountains, and more or less open to the sea. Affairs have changed since then, and our population have swept in great masses to the westward, and founded powerful states there. These interior states have a commerce and a navigation, too, and at peril. Different as may be the character of this commerce and navigation, and different the perils to which it is incident, it is yet commerce and navigation among the states, and of course within the purview of the constitution. Are we to suppose any practical difference between the condition of states upon the seaboard and in the interior? Can it affect the question that the particular character of the protection required in the two cases is dissimilar? Is Congress restricted in its power to regulate commerce, including navigation, to the particular class of measures hitherto employed by it—the construction of light-houses, buoys, beacons, etc.? Admit other and better means discovered, may not these be resorted to? Admit these means entirely inappropriate, and unsuited to particular kinds of commerce and navigation—for example, the commerce and navigation of western waters—does the regulating power of Congress cease its influence from that fact? Would not this be precious trifling? Could such partial and unjust legislation have been within the contemplation of the framers of the constitution? The conclusion is irresistible. Wherever the commerce and navigation of the states, as states, with each other is at peril, there the fostering and protective hand of the general government is extended; and whether the means of relief be buoys, light-houses, beacons, and public piers, or machinery for the removal of snags, logs, sand-banks, rocks, etc., the case is essentially the same.

We have thus analyzed and imperfectly presented the argument of Mr. Calhoun, in illustration of the intention of the clause which gives to Congress the power to regulate commerce among the states. We shall now consider the application of the power to particular cases, and determine how far federal legislation may be legitimately extended. We recur again to the report.

Let us take the case of a river wholly confined to the territory of a single state. Does the power of Congress extend to this? Certainly not. Such a river is subject exclusively to state jurisdiction, with only such slight exceptions as have no kind of application to

the subject before us. Its commerce cannot be "commerce among the states." A different construction would entirely destroy the individuality of the states, and sweep into the hands of government, in the result, all the powers that were so carefully reserved. As well might Congress "regulate" the canals, railroads, turnpikes, etc., of the state, as the waters wholly within its limits. As well might Congress set about digging ditches and cleaning out streets, as keeping in order and navigable each local and insignificant stream. Such powers are essentially the states'.

Enlarging the question to that of a river embraced within the jurisdiction of two states, what becomes of the power to regulate its commerce and its navigation? The power cannot be lodged in either one of the states exclusively, for then we should have a state legislation beyond its domain. Has it been delegated to Congress? The clause "regulate commerce among the states" would seem in point and conclusive, were it not met and controlled by another clause. The parts of every instrument or compact are to be so construed as to give effect to the whole, for the parties contracting cannot be supposed to have intended an inconsistency. The ends intended to be accomplished by the compact are also to be taken into account. Now, what were these ends, or, in other words, what is the great and cardinal principle of our system of government? It is, *first*, that individuals, or combinations of individuals, shall be entrusted with the control and management of all enterprises within their power to conduct. *Second*, that the state shall have the management of those enterprises which are proper, and which cannot be accomplished by the unaided efforts of their citizens. *Third*, that the power of the general government extends to those cases only in which the action of individuals, combinations of individuals, or of states, would be altogether inefficient, or would lead to consequences prejudicial to the general weal. Under this rule the powers of the federal government are limited to cases of necessity, and include all of those cases. The constitution is explicit in prohibiting interference here, and so jealous is it, that all combinations of the states, or treaties formed between them for any such purpose, are absolutely forbidden. There is one exception, however, and it is too remarkable to have been unintentional, or without important meaning. This exception could only have been intended to provide for cases like that of the river we are considering. It is declared that "no state shall, *without the consent of Congress*, enter into any compact or compacts with any other state." The inference is clear that, *with such consent*, a state may enter into compact with another state; but the inference cannot be extended farther, and a compact between a greater number than two states would be unconstitutional

and void. Why, then, the remarkable exception? The answer is, that in the particular case the advantages of a combination of states greatly preponderate over the dangers. The constitution was, however, unwilling to go farther. And this brings us back to the river. Either the power of combining yielded to two states, under certain restrictions, means something or nothing. If nothing, then we impute a school-boy blunder to sages in legislation—if something, what else can it refer to than to cases interesting to these states, and in regard to which the legislation of neither, singly, would be sufficient? What else is there but for these states to combine together, form a compact, and legislate jointly in the matter? What else can there be, if the theory of our government has been stated correctly to include only those cases which cannot otherwise be provided for? The opinion of Mr. Calhoun is, that the general power given to Congress to regulate commerce among the states, is restricted in the particular case of commerce or navigation, interesting to two states only, by another power recognized in these states to combine and regulate that commerce or navigation themselves.*

The last proposition we shall discuss is that of a river passing through the territories of three or more states. Here the power of Congress fully and undeniably comes in. The states can effect nothing. Their individual action would be inconsistent and inadequate, and their combination is out of the question. The *casus fœderis*, in the language of the lawyers, arises at this point, and the power to regulate commerce among the states, is left to apply in all its strictness. The states bordering upon the banks of every such river, have the right to demand from Congress all that protection which is granted to the commerce and navigation of the Atlantic coasts.

Regarding this construction of the constitution, we must at least be struck with its simplicity and its correspondence in the

* Candor compels us to suggest an apparent flaw in the reasoning here, which we should gladly have Mr. Calhoun or some one else remove. Suppose the "consent" of Congress be systematically denied to every combination whatever, between one state and another state. Is not this a matter within the discretion of Congress; and have we any idea how that discretion will be exercised? If Congress have the power to "consent," every man will see at a glance that Congress must have the power *not* to consent; and what then becomes of the river, we would ask. It is wholly without remedy, for the states can do nothing—and if Mr. Calhoun be right, Congress have not the power. But when the Constitution gives to Congress the power of withholding consent, does it not at the same time, by strong implication, give the power of legislating for those cases, from which the consent, if given, would have excluded it. Is it not within the discretion of Congress on this construction, either to act itself or to allow the action of the state? The difficulty is worthy of note.

main with those principles of federation which were laid down and argued with such consummate ability by the statesmen who framed and adopted the compact. It neither enlarges to a dangerous extent the powers of Congress, nor yet does it limit and control them in such a manner as to reduce that body to imbecility and absolute dependence upon the states. Each member of the Union is to regulate its own internal and local affairs. The principle is upon the side of liberty—is a great conservative of republicanism—a barrier against the tyranny and oppression which experience has demonstrated as the inevitable tendency of centralism when legislating in detail on the interests of remote provinces. Every matter of common and equal interest to two states, and to no more, belongs to the jurisdiction of these states leagued together, with the consent of Congress, for the particular purpose. All matters of general interest, or those in which three or more states are concerned, belong to the exclusive cognizance and control of Congress. These principles appear safe, and, if properly applied, can be liable to little abuse.

We have followed Mr. Calhoun's argument throughout, and presented it with as much fairness as we are capable. Whatever be its merits, its influence has been small. The lower branch of Congress rejected by an overwhelming majority even a reference of the bill presented before them, and framed upon the principles of the report. This course of action, in connection with the passage of the Harbor Bill in Senate, by a vote of two to one, may be regarded as a prompt and signal defeat of the principles of Mr. Calhoun on the subject of internal improvements, and a declaration by Congress of the course intended to be pursued in all the future. The question is before the country, and time will determine where the wisdom is, with the report or with those who have denounced and defeated it.

We turn our attention now to the remaining branch of the leading subject of the present article, *i. e.*, the protective system. This subject has divided parties in America for a third of a century, and proved a perfect apple of discord thrown in among us. It threatened upon one occasion an entire rupture of the Union, or at least what cannot but be regarded as equally bad, a resort to coercion *vi et armis* by the general government over a state. The ashes of this old and bitter controversy we have no desire again to rake up, nor would we upon any account enter the arena where the fierce champions or opponents of the system contend together. These are matters we cordially resign to works of a political character, which ours does not, and shall not in any degree resemble—and to political men, of which class we

certainly are not, and as we remarked before, have little disposition to be.

It is a very common and just notion that government should protect all the great interests of a country. Were any one of these interests neglected, there would be a valid ground of remonstrance; and, perhaps, in the end of something still more serious. Even partial and unequal protection would be a source of clamor. The great interests of a country may be protected in various ways. They may be protected by wise and salutary laws of general application. They may be protected by laws regulating particular branches of enterprise. They may be protected by bonuses, or by imposts skilfully contrived for the purpose. Does the duty of the general government, to protect all the great interests of the country, authorize it to adopt at pleasure either or all the modes of legislation we have enumerated? The grounds of the great controversy upon which we at once touch, are too familiar to require at this day any exposition. In relation to the skilful adjustment of imposts upon principles of protection, Congress have long since claimed the right, and exercised it.

The tariff of 1790 was a revenue tariff, with slight discriminations. The tariff of 1816 was imposed with an eye to the perilous position of the manufacturing classes grown up during the war, and threatened with annihilation at its close. It was a high but not a strictly protective tariff. The principle of protection was, however, deemed to be conceded. The tariff of 1824 was a protective tariff. The tariff of 1828 carried the system to perfection, and received the cognomen, in the bitter language of the times, "the bill of abominations." The tariff of 1832 modified but persisted in the system. The compromise of 1833 was an olive branch to heal the dissensions in the country, and it provided for a gradual reduction of duties down to the revenue standard. For ten years the compromise was preserved. During this period the condition of the country had greatly changed. The manufacturing interests of the East complained that they were rapidly falling into decay. The sugar interests of the South complained that they were overlooked. At the close of the period an administration found itself completely broken down in popularity, and tremendous efforts were being made in the country to put an end to its power. The country was becoming involved deeper and deeper in debt, and the revenue had fallen far below its wants. The lines of party were strongly drawn in reference to the crisis. The elections went triumphantly everywhere in favor of a new administration upon new principles. Congress met, and the tariff of 1842 was adopted—a tariff upon the same principles as that of 1828, although

with a less average duty. The manufactures of the East have received new life and vigor. New-England is covering her barren hills with workshops. Pennsylvania is developing the inexhaustible resources of her iron and her coal, and the rich cane fields of Louisiana are crowning with wealth the labors of her enterprising planters; and causing to start up, as if by magic, along the banks of the Mississippi, the costly mansion and the magnificent sugar mill. Is the question settled, then, in favor of the constitutionality and expediency of protecting home industry?

It is not a little remarkable that with this picture of great and, we believe, general prosperity extended before us, the opponents of the system of protective duties, or, what is the same thing, of restricted, as opposed to free trade, have been increasing steadily in numbers, and growing in power. They deny that appearances of prosperity should be held at all conclusive. The inherent vitality of a young and vigorous republic is such that a high degree of prosperity may be consistent with the most grievous errors of legislation—a protective tariff among the rest. You may impede, though it would be next to impossible to arrest, the progress of such a country; old age and uninterrupted health even in the human constitution, are not unfrequently associated with habits which have been long continued, but which may be demonstrated as of injurious tendency. The exceptions cannot affect the rule. It would be impossible to say how much greater health and age might have attended opposite habits.

The truth is, we talk so much of freedom that we come at last to venerate free anything and everything, and free trade not the least. At first sight, too, there is something seductive in the idea of free trade, and it has never been without its fond votaries. If we take the most celebrated writers upon political economy from the earliest times, and in all countries, we shall be surprised at least, though we may not be satisfied and convinced, by their unanimous commendation of unrestricted trade. From Sismondi, Adam Smith, and Jean Baptiste Say, down to the present time, there is not an important exception that we know of. We adduce this, not as an argument, but as a fact. We know too well that theoretic philosophy proves itself often visionary and impracticable, and that experience corrects every day the faults of hypothesis. But let the fact go for what it is worth. The Italian states of the middle ages, we are told, prospered beyond all example under the influence of their free commerce inculcated by their writers and applied by their statesmen. England is pointed to, and strange as it may seem by the advocates of either system, triumphantly. Her immense power and influence have been

felt all over the world, and for this she is conceived by some indebted to her severe, restrictive and prohibitory systems, which destroy all hope of competition from other quarters. Others advert to the internal miseries of the empire—to the pauperism and dreadful social and physical suffering of millions of the lower classes who have no hope of relief but in the grave. The vast extension of the British cotton manufacture has been frequently referred to, though some have shown from Mr. Baines' great work upon the subject, that that branch of industry in England at least, has been a spontaneous growth, independent of all protective legislation, and even in the face of legislative obstacles.* The late direction which has been given to the affairs of England by the policy of Sir Robert Peel, has also been largely commented upon; and the reduction, at one stroke, of the duty upon over four hundred articles of merchandise, and the whole course in relation to the corn laws, seem to evince a disposition, on the part of that country, to stand out against the world as opposed to all restrictions, and to elevate very soon the banners of free trade. We hear, too, this course adverted to in evidence of the astute policy of England, and of that stubborn spirit to protect and preserve her industry and her enterprise by the only possible means which circumstances have now left her. By leading the way thus for free trade, and inducing it from others, in reciprocity, she takes the surest means of securing the supremacy she has already attained, for under such a course of policy no nation in the world can pretend to anything like a competition with her. The mechanism of that iron heart of England is impelled forever by the love of gain; and there is no sacrifice however great but her honor and her liberty, that she will not cheerfully make to consummate her purpose. Stern, crafty, politic and overbearing, she knows but one policy—the commercial empire of the world.

Thus has it been with the vexed question of protection in almost all the whole progress of our history. We have agitated, but where have we decided? Indeed, in heaven's name it might be asked, who shall decide where venerated authorities, established principles,

* Mr. Baines remarks that "statutes framed for the regulation of commerce, have done little or nothing either for or against British manufacture. This trade was not the nursling of government protection. The advocates of commercial restrictions find no support for their principles from the history of the cotton trade, however they may seem to be favored by that of the woolen trade." After referring in detail to the various statutes relating to the general subject of cotton and cotton goods, Mr. Baines finally concludes with the reflection: "An examination of the laws above cited, and of the history of the manufacture, will make it evident that its extension was in no degree owing to the interposition of parliament."—*Baines' Hist. Cotton Manufacture*, chap. xiv. p. 320, &c.

and powerful and illustrious examples are introduced and supported by advocates on either side, and to ordinary apprehensions seemingly balance each other. Is it not a sad evidence of the infirmity of human reason, and of the insuperable difficulties in the way of forming a correct conclusion upon matters of government policy? Adam Smith wisely remarked that in political science two and two often make one instead of four. Free trade and the protective system, as we call it, are antipodes to each other, and yet no experience or investigations, however able they have been, have enabled us, as a nation, to decide permanently between them. If either of these be the true system, the other cannot but be regarded as grievously wrong, and inimical to the best interests of the country. Yet we find our citizens undecided. We find statesmen of the highest and most unblemished reputation, advocating with all their power the one side as well as the other. We find our legislation partaking of the same character as our statesmen, and fluctuating as it is administered by them. The question appears as open as it did thirty years ago. We mark the struggles which are now taking place in Congress. In the face of powerful opposition, a party in the House of Representatives have carried a tariff based upon revenue principles in repeal of that of 1842, and this new tariff is endeavored to be enforced at a time when we are involved in an expensive war with a neighboring government; and when the old tariff, high as are its duties, would scarcely be adequate to meet the enormous requisitions of the government. The Senate are equally divided upon the question, and it remains even now very doubtful which way they will determine. This fact is evidence of the strength of feeling which is enlisted upon both sides, and the stubborn and unyielding resolution of either. Let us gather from the circumstance the great and practical principle of moderation. Let us at least respect the opinions of others where experience teaches there has existed so much room for doubt. The wise will deliberate and not denounce. Experience must eventually determine between the two systems. Protection has certainly been admitted a trial. If an experiment is to be made upon anything approximating to free trade, there will be an opportunity afforded in the results, perhaps, of deducing more correct conclusions than we have hitherto been able. Either policy, however, is better than perpetual change. Any fixed law is better than a mutable one. The certainty and permanence of laws are of primary consideration.*

In the midst of this region of doubt and incertitude, however, it cannot but afford us some delight to arrive at certain principles

of general, we ought perhaps to have said universal admission. There are branches of home industry with reference to which the right and duty of government to protect and support, have never been questioned. They attract, of necessity, the sympathies and regard of mankind; and when society comes forward to encourage and advance them, it performs a solemn act of duty to public benefactors, whose reward has too frequently been a cold and systematic neglect. We mean authors and inventors. The constitution of the United States, among all its high provisions, has not neglected an important one in relation to this interesting class; and in declaring that Congress shall have power to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries, it has borne testimony to the exalted truth that knowledge is power; and that science, letters, and arts, are, under God, the great instruments for extending civilization and perpetuating liberty. There is an ægis extended here which is worthy of a noble government. No systems of free trade or of piracy can claim to be heard in opposition. The empire of genius, knowledge, and skill, must and will be perpetuated. It is the glory of our age that we are removing all obstructions. The empire has no limits. The attainment of to-day, high as it may be, creates the want of to-morrow, and that want opens the way for still higher attainments. Bulwer remarks somewhere truly, that in every age the mass of the people will approximate to something like the level of those who were elevated above the mass of the preceding age. When we were much younger than now, our soul was fired with the enthusiasm of Couthon, who declared in the intoxication of the French Revolution that man was about to reach his acme of perfection; and that as science progressed, and one by one were removed by its influences, the causes which tend to produce death, death itself would become at last an impossible event.* Let us, then, as a people, foster and protect the arts and sciences.

Our first duty shall be to consider the system of copyright, which, for a definite period, creates a species of monopoly in favor of those who have, whether in theory or in fact, added to the stock of human knowledge by the production of a book. Our ideas are to all intents and purposes our property, as much so as our wares. The one are the creation of mental, the other of physical action—but both of action, and of course to a greater or less extent of labor. Our ideas may be of very little value, and so,

* See note at the close of this article.

* This remark is quoted in a note somewhere in that extraordinary work of Bulwer, *Zanoni*.

indeed, may be anything else. The right of property in them cannot be affected by their degree of merit. A man may never reach higher than to tell a score, or botch a sole of leather; but another will trace the laws of gravitation, or invent a steam engine. Intellectual property requires the strictest of all safeguards, inasmuch as its unlawful appropriation is attended with least difficulty. A larceny committed upon it the law may not regard as felony, but mankind have agreed in stamping it plagiarism, an offence equally ignominious. If our ideas be not committed, as Cicero expresses it, to the custody of letters, or are not worked up into some tangible shape, we have no kind of legal remedy against those who convert them to their own uses—copyright or patent-right cannot extend to them. Some of the old political economists were wont to go so far as to deny that a man could have any property in a book save in the paper and the manual workmanship of it. The idea of intellectual property was too refined for their age. The labors of intellect were regarded as unprofitable and as contributing nothing to the sum total of national wealth. These notions are happily exploded, and the world has discovered that the man who writes a poem—as for example, Milton; invents a theorem—as for example, Newton; or teaches a new mode of investigation—as for example, Bacon, are quite as good, and altogether as useful, as those who raise crops of cotton, corn, and sugar, make wagons, or build bridges.

The laws of Congress provide a uniform mode of protection to all authors and inventors, by holding out to them the benefit of copy or patent right. The former applies "to all books, maps, charts, and musical compositions, prints, cuts and engravings, when the authors are citizens of the United States;" and they are endowed with the exclusive right of printing, re-printing, and vending them for twenty-eight years, and for the farther term of fourteen years beyond, should they or their families be alive at the expiration of the first term. The author must have deposited a copy of his work with the clerk of the District Court, to be sent to Washington for the benefit of the state library. The privilege of copyright is given by statute, and it would seem to be the better opinion that prior to the reign of Anne there was no remedy of the kind, for the common law admitted none.

It will be discovered that the act of Congress extends its privileges only to citizens of the United States. This has been long a source of loud and just complaint. Intended for the protection of native authors over those of foreign countries, the effect has been the reverse. Our own writers have not been able to withstand the overwhelming competition of works introduced from abroad,

re-published and sold among us at little more than the mere cost of printing and publication. Foreign authors have commanded the market without realizing themselves a cent of profit from the circumstance. The only persons who have gained are the extensive publication houses of the North, and these, in the harvest which is thus afforded, excuse themselves from paying other than the merest pittance in remuneration to American writers for their productions, on the ground that sufficiency of reading matter for all the wants of the trade may be introduced from abroad free of copyright costs. Such a state of things has tended to stifle native genius. It is not thus that we hope to build up a body of home literature which shall be worthy of the high mission of America. Men of genius, those public benefactors in the world of thought, are seldom men of wealth. For a Byron, with lands and titles, we shall find a score like Savage dying at Newgate. "Laurel crowned" genius is clad in "rusty black," will we suffer it to languish in privation and want?

In vain does Lord Camden declaim against other consideration than glory for the achievements of Mind! "Glory," says he on a memorable occasion, "is the reward of science, and those who deserve it scorn all meaner views. It was not for gain that Bacon, Milton, Newton and Locke instructed and delighted mankind." In vain will Byron condemn the literary traffic of Scott:

Though Murray with his Miller may combine,
To yield thy muse just half-a-crown a line;
No! when the sons of song descend to trade,
Their bays are sear, their former laurels fade;
Let such forego the poet's sacred name,
Who rack their brains for lucre, not for fame.
Still for stern Mammon may they toil in vain,
And sadly gaze on gold they cannot gain;
Such be their meed, such still the just reward
Of prostituted muse and hireling bard;
For this we spurn Apollo's venal son,
And bid a long good night to Marmion.

Shall the same letters which are to confer immortality confer death, like the shaft winged by the eagle's plumage to the eagle's heart? We cannot measure the world of thought by that of wares and merchandise, but the one should not less command tribute from the other.

Efforts have been made to amend our copyright laws, but they have proved fruitless. We have failed to imitate Britain, the favored land of almost everything revered in letters. The policy of that government does not admit of discrimination between home and foreign writers. She prizes science for itself. If the publication be made in England, it matters not where the author may reside. His interest in copyright at once attaches. The same liberal

rule has been adopted in France, and the author's right continued during his own life, and the life of his wife, and twenty years after the decease of both for the benefit of his children. It is a curious fact in the history of man, remarks Kent, that the French national convention in July, 1793, should have busied themselves with a law of this kind, when the whole republic was at that time in the most violent convulsions, and the combined armies were invading France and besieging Valenciennes; when Paris was one scene of proscription, terror, sedition, imprisonment, and judicial massacre, under the forms of the revolutionary tribunal; when the convention had just been mutilated by its own denunciation and imprisonment of the deputies of the Gironde party, and the whole nation was just preparing to rise *en masse* to expel the invaders. If the production of such a law at such time be not resolvable into mere vanity and affectation, then indeed we may well say with Mr. Hume, so inconsistent is human nature with itself, and so easily do gentle, pacific, and generous sentiments ally both with the most heroic courage and fiercest barbarity. In Prussia the French system is very nearly followed. In Germany copyright is perpetual, though without adequate legal remedies for its infraction. A perpetual copyright, is, however, carrying protection too far, and will be found impracticable. The Prussian law admits to copyright works published in other countries, provided these extend the same favor to Prussian writers. The English law is the same. Even in Russia authorship is protected for life and for twenty-five years after, and copyright cannot be attached for debt.

The cognizance of cases under the laws of copyright belongs, of course, to the federal courts, and the administration of this branch of jurisprudence is perplexed with difficulties growing out of the peculiar nature of questions which continually arise. What amounts to an invasion of copyright is frequently a point of the utmost nicety to determine. Whether acting upon the stage a composition will amount to such invasion, is still a matter of doubt. There is a special action on the case with us to prevent the publication of manuscripts without the author's consent, and the United States courts will grant injunctions for the same purpose. Private letters are privileged from publication unless under peculiar circumstances, the writers not being conceived as having parted with their property by the mere act of directing them to another. A translation is a book entitled to copyright. Notes and commentaries upon another's book have an equal privilege. The same is true of an abridgment, which provoked from Dr. Lieber the severe remark, "It is as

if one had the right to cut the ears of my corn, provided he left the stalks untouched."

Science is the mother of art, and the noble offspring emulates the proud parent. The fostering care of society is due to them alike. The fine arts are an anomalous progeny. They have advanced to highest perfection where science has been little better than alchemy, astrology, or metempsychosis. When Pythagoras talked of the divine music of the spheres, and predicted other worlds to complete the diapason, Zeuxis and Pharrhasius, Praxiteles and Apelles astonished mankind with miracles of skill upon canvas and in stone. When Copernicus and Galileo were recanting their "odious heresies" of a solar system before the Inquisition, Raphael, Michael Angelo, and Correggio were shedding glory upon the age of Leo X. The progress of the fine arts admits of little explication. The history which makes them dependent certainly upon science, yet vastly more upon correct taste, shows that they are influenced by neither so much as by times, and events, and peculiar combinations of circumstances. They are at low ebb now where there is no want of taste and assuredly none of science in the world. A correct theory upon the point remains a desideratum.

The case of the useful arts, on the other hand, is clear enough. No room can remain for doubt. Primitive and unlettered ages scarcely attain to the complexity of a plow. The progress of art among them is slow. The Hindoos of the present day have in daily use almost the identical rude machinery for manufacturing purposes which their ancestors applied thousands of years ago. Their perfection in weaving is a matter of physical action arising from acuteness of touch and agility of motion. Mr. Mill attributes to this their muslins, so fine as to be invisible "when laid upon the grass and saturated with dew." The Orientals term these muslins "webs of woven wind," and the great lords, a traveler gravely remarks, take much pleasure in seeing their wives and women dance before them with no other garments than these, which are as no garments at all. The useful arts were at a low ebb among the polished nations of antiquity. Many of the most important of these have been lost, but others have come down to us from that period. The Egyptians could not construct an arch, but they erected obelisks, and elevated by machinery enormous masses of rock to almost incredible heights. The ingenuity of the ancients developed itself chiefly in their engines of war. Archimedes threw vast rocks from Syracuse upon besiegers, and set fire to their fleet by an ingenious combination of lenses. The seven wonders of the world were works of art. The steam engine of modern days

is, however, an infinitely greater wonder than them all; and the magnetic telegraph is an amazing miracle which casts into the shade and renders ridiculous the pretensions of the combined sciences and arts of all antiquity.

About the era of the fifteenth century, an inquisitive and intelligent spirit of investigation began to be felt in Europe. We fix here the compass, the printing-press, and the invention of gunpowder. The world was escaping from feudalism, and from the barbaric dominion of power over intellect. The last of the barons struggled in Warwick, the king-maker, against the principles of hardy independence, which were taking growth with the people.

We often recur in memory, with renewed pleasure, to the masterly picture furnished by Bulwer, of this struggle—enterprise against ignorant aristocracy—money, interest against ranks—shopmen, artisans, citizens, or burgesses, against the tyranny of orders. The city of London was taking rapid strides, and its mayor and aldermen began to use language of conscious power even to the king. That was a fine picture of old Adam Warner,* who represented a class at the period when faint lights were beginning to gleam in upon the night of science and art. An ill-defined notion of the steam engine haunted the fancy of the old philosopher. He had, in the seclusion of his chamber, almost devoted a life-time to its development, and reduced himself to want and beggary by the costly material bestowed upon the child of his fancy. The machine is before him all wonderful to behold, but it refuses motion. No skill, no influence, no toil of old Adam Warner can remove the mysterious inertia. He turns over his musty manuscripts, through sleepless nights, in vain. He flies to alchemy and mysticism. A German doctor affords the clue—"a certain axle should be made of diamond, bathed in moonshine, and washed in elixir." But where shall the beggared sage obtain a DIAMOND? He steals at midnight to the bedside of his own Sybil, to rob her of the scanty purse which alone preserved them from starvation. "In his sublime devotion and loyalty to his abstract idea there was a devouring cruelty, of which his meek and gentle scholar was wholly unconscious." Adam Warner triumphs—the Eureka is before him and blesses his sight, as motion flies like thought from wheel to wheel of the wondrous and complicated machine—but at the next instant Richard, Duke of Gloucester, the boy philosopher, directs the blow which breaks at once the heart of the sage, and fractures in a thousand pieces what is conceived an *infernal invention*! Thus have we portrayed the

struggles, the triumphs, and the defeats of genius in the faint and dawning light of science and art.

Lord Bacon came, however, like one in the wilderness, making straight the way of those that should follow. This wonderful man, though bowed down to the earth by his moral infirmities, yet soared aloft like an archangel in intelligence. He traced out the great laws of science and philosophy, and marked minutely the causes which had led the world astray, in vain and ridiculous generalities and sophisms. His powerful intellect scorned the dialectics of Europe, the disputatious learning of the philosophers which, without one practical result, began and ended in abstractions, ideas, notions, spirits, infinities, and the whole farago of scholastic learning. The secret of men's ignorance was their pride. They sought rather to prescribe laws for nature than to sit patiently down like Saul at the feet of Gamaliel, and learn the established ones. They had rather demonstrate from reason a physical law, than discover a hundred from experiment. Indeed a single experiment, had they deigned to make it, would have made sad work with their finest hypotheses. Bacon reversed the process. He laid down the system of analysis and induction—of interrogating nature, of penetrating her inmost arcana, and divulging her most precious lore. His immortal work was given to a world scarce prepared to appreciate it; but although Coke wrote upon the envelope:

"It deserveth not to be read in schools,
But to be freighted in the ship of fools,"

Newton looked into it, and discovered the laws of gravitation: Locke looked into it, and wrote the Essay on the Human Understanding: Leibnitz, Descartes, and La Place mastered it, and mastered at the same time the great truths of metaphysics and astronomy.

But not the philosophers only—mankind were set aright by the doctrines of Bacon, wherever they have been applied, and now the world at large have made them their own, science and art have been rapidly extending their domain. An age of inventions was at once heralded in. It is now two hundred years since Bacon detailed the true philosophy, but the world in that short time has made more extensive conquests over nature; has achieved more for human progress, for the welfare of man, and the perfection of society and government, than was achieved in the previous five thousand six hundred years of its history. But our purpose is with the arts. We have seen invention following in the train of invention, each still more glittering and extraordinary than its predecessor. Even the chief of these we may not enumerate. It sufficeth that the men of this age regard the impossibilities of the previous one as mere child's

* Bulwer's Last of the Barons.

work. We achieve now, very much as a matter of course, what scarce a generation ago would have entitled us to the honors of an inquisition of sorcery, or perhaps to the custody of the prince and author of all wicked and infernal arts. We even cease to say much of impossibilities. Our ancestors demonstrated that all nature was wrought up out of four elementary substances, but now it is modestly said that there are *at least* fifty-four such substances. The telescope and microscope are giving new worlds every day. Even the lightning is wrested from heaven to communicate the thoughts of man—a purpose little dreamed of by the great philosopher, upon whose epitaph it is written, *eripuit fulmen calo*. We must be foolish in an age of progress like this, to be wise. We must not even cast aside the seeming absurdity, lest within it there be contained the germs of a great truth. The arts and sciences are “twain one.” This is impossible, therefore it is true, argued Tertullian, in the first century, as a rule of faith. It would be as good argument in the eighteenth century as the contrary, *therefore it is, not true*. It is well enough to make sport of the follies of science, and of those who would quadrature the circle, multiply the cube, invent perpetual motion, or the philosopher’s stone, and say to each as Cowley did:

“For neither it in art nor nature is.”

We are half inclined to think so ourself, but then Sir Humphrey Davy would not say positively that the philosopher’s stone was unattainable. Maupertius declared that we could not prove its impossibility. We even hesitate to put upon science and art the limitation which De Lolme put upon the powers of Parliament, the inability to convert a man into a woman, or the contrary—or to make a man altogether. There is more of modesty than of skepticism in the remark.

The province of the arts is to reduce the elements to our will and substitute machinery for human labor. By their aid a portion of mankind can be liberated from physical toil, who otherwise would have been necessitated to earn meagre subsistence by it alone. These become pioneers, and direct the movements of man and society to higher and still higher good. In this class are our sages and philosophers, our statesmen and legislators, our artists and inventors; in this class our public instructors in letters, morality and religion—those that cure our bodily infirmities, redress our wrongs and protect our rights. In the progress of the arts, the number of these constantly augments, or what is equally susceptible of proof, the whole community become placed in positions which require less exhausting physical exertion, and admit of increased development in other and higher faculties of our nature,

than the mere animal. It might be demonstrated, such has been our success already that the average period of human labor is as nothing compared with what it would have been had the arts remained stationary as in primitive ages, and we been called upon, admitting it possible, by our own labor exclusively, to produce the same outward comforts for man which he now enjoys. How happens it then, since the average of labor is so inconsiderable, that the serfs and slaves in some countries, and indeed in all, toil incessantly day and night, without repose, or hope, to feed at last upon scanty husks? They toil on, it is said, in cruel competition with machinery, whose relentless speed strains their faculties to the utmost, admits no intermission, makes no allowance for human feebleness, but unnaturally taxes flesh and sinews to keep pace with wheels and arms of iron. It is plain that these people have little benefited by the progress of art. It is a melancholy fact which we cannot rebut, but which we must conceive to result from nothing else than the monstrous abuses of society or government somewhere; and if these cannot be remedied, it must be believed that God intended deformity in the moral world as we find it in the physical, to show by contrast the beauties of symmetry and order. Machinery may do much, but it can never cause the iniquities of oppression to cease, and preach with controlling influence to a man from the text: Thou shalt not grind the faces of the poor, nor trample a weaker brother in the dust.

But this very liberation of labor we commend, has been complained of. A newly-discovered process will enable ten men to do the work of a hundred. The other ninety pass at once out of employment, and raise the cry of injury and oppression. The stocking weavers in England collected *en masse*, and with fierce indignation broke in pieces every stocking frame they could find. When calico printing sought introduction into France, ten thousand calico *painters* remonstrated in public meetings and in petitions to the throne, against a fearful innovation which must inevitably throw them out of employment and involve them in ruin. It is true that for a season the result of a new invention often is, that operatives in large numbers beg in vain

“A brother of the earth
To give them leave to toil.”

But this is for a moment only, as it were. The evil is brief, and the good perpetual. Each of these changes are successive steps in human progress. The stocking weavers will find that what in miserable madness they destroyed, was calculated shortly to give employment to a larger number than ever of their class. And when Colbert firmly resisted the suicidal policy of the calico

painters they thanked him afterward, for there was more calico made a hundred times over. By simple and less expensive modes of production we cheapen commodities and put them within reach of the poorest, and indefinitely increase production itself with vastly less of labor. The man who may be printing our article congratulates himself, if he is like others of his craft with whom we have conversed, no doubt, that types at least cannot be adjusted in composition by machinery, and so his art is forever safe. But suppose that to be realized of which rumor has more than once spoken, and a bona fide type-setter be introduced into a printing office, capable of doing as much work with one man, as a dozen could effect without it, we should hail the invention with gratulation, and so would the printers themselves, could they see the whole case at once. The printing art would receive an immediate extension which no man can conceive, and in a very brief space this iron-headed and iron-fingered compositor would call for the services, with less labor to themselves, of many times the number which it first may have thrown out of employ. These things regulate themselves very soon. Dr. Franklin, we think, takes somewhere the extreme case of machinery, arrived at such perfection as to discharge the whole mass of labor. An impossible hypothesis, however, unless we can make thinking matter, or, in short, a man. But admit the supposition, what then? Should we perish in this perfection? Should we be inevitably ruined because God has allowed us, by intellect, to work out our great salvation from his bitter curse, "by the sweat of thy brow thou shalt eat bread." Who will complain of such an approaching crisis in the affairs of men, when sustenance, and raiment, and all our wants shall be supplied us in highest perfection by art and nature, without the degradation of physical toil. The era may be well entitled millennial!

But a truce to such speculations, which have led us much farther than we had any intention. Science we entitled the parent of art. It occurs to us that the reaction which exists between the two should be brought under particular mention. *Aeneas* bore away from burning Troy Anchises, his aged father, and thus gave back the life he had received. The arts reflect upon science, and the parent receives new vigor from the child. Science teaches the laws of optics—the optician constructs the telescope and enlarges the domain of science. A principle discovered in nature may result in a machine, and a machine invented without particular knowledge of its principle, will yet divulge that principle to philosophy. Examples of this sort could be multiplied without end. The artist may produce a result with little knowledge of the causes. An inventor may have no familiarity science. But how much higher the re-

sults and the inventions when they proceed upon profound knowledge. Indolent men sometimes invent to save labor, and as it were by accident. A lazy boy becoming wearied with opening and closing the valve of an engine on the old principle, fastened it to a part of the machinery, and thus achieved, by accident, what had baffled the skill of inventors. Necessity, also, has much to do with invention. The great rule is, notwithstanding, otherwise, and patient investigation in science will precede worthy achievement in art. What a magnificent conception would the steam engine have been, but we know it to be the result of years of study, of vigils by day and by night, of discomfitures, of doubts, of struggles, of sickening apprehensions, of partial despair and tardy triumph. Shall not a man be versed in the laws and principles of light, of heat, of electricity, of motion, gravitation and mathematics, before he ventures upon new combinations of matter, and enters the field of invention?

Art, then, is deserving equally with science of government protection—legitimate protection, we mean, and not that of perpetual monopolies, restrictions and corporate trades companies, such as were of common use in the middle ages. The protection of patent right is the most natural and just, and indeed it is the only natural and just one. A man, and his descendants after him, shall claim *in perpetuo* a right to the lands and tenements acquired by his mere physical labor; but when mind incorporates itself as it were with matter, and becomes in a subordinate sense a creator, shall there be a less privilege of property admitted in its results? Governments have followed reason here, and if they have distinguished at all between the two cases, it is only in granting a term of years and not a fee-simple right in intellectual property. The distinction upon other principles is proper, provided the term be sufficiently extended.

The Constitution says, "Congress shall have the power of securing for *limited times*, to inventors," &c. We have legislated frequently upon the subject. The great act of 1836 elaborated a system of patent right, and carried it to high perfection. Previously patents had been granted by the department as a matter of course, and without reference to originality. It was conceived that the courts would settle all conflicting claims. Great abuses and much litigation was the natural result. But the act of 1836 effected a radical revolution.

The patent office is attached to the office of state, and a commissioner of patents is appointed. Applications are to be made in writing to the commissioner, by any person having invented or discovered any new and useful improvement in any art, machine, manufacture, or composition of matter, not known or used by others before his inven-

tion or discovery thereof, and not at the time of his application in public use, or on sale, with his consent and allowance, as the inventor or discoverer. The applicant must deliver a written description of his invention or discovery, and of the manner and process of making, constructing, using and compounding the same, in full, clear and exact terms, avoiding unnecessary prolixity, so as to enable any person skilled in the art or science to which it appertains, or is most nearly connected, to make, construct, compound, and use the same; and he must, in the case of a machine, fully explain the principle and the application of it, by which it may be distinguished from other inventions, and he must particularly specify the part, improvement, or combination, which he claims as his own invention or discovery. He must accompany the same with drawings and written references, where the nature of the case admits of drawings, or specimens of ingredients, and of the composition of matter, sufficient in quantity for the purpose of experiment, where the invention or discovery is of a composition of matter. He must likewise furnish a model of his invention, in cases which admit of representation by model. The applicant is also to make oath or affirmation that he believes he is the original and first inventor or discoverer of the art, machine, composition or improvement for which he solicits a patent, and that he does not know or believe that the same was ever before known, or used, and he must farther state of what country he is a citizen.*

We have exhibited the substance of the law. The commissioner decides upon the merits of each particular case, and grants or refuses, as it may be, the application. An appeal lies from him to a board, appointed for the purpose by the Secretary of State. Where the patent is granted, it confers upon the inventor and his heirs, executors, administrators, assigns, &c., after him, the exclusive right to make and vend the same for fourteen years, and under certain circumstances allows a farther extension of seven years. The patentee, if a citizen or an alien resident, pays into the hands of the commissioner, for his privilege, thirty dollars. If a foreigner resident abroad, the tax is \$300, but a British subject must pay the sum of \$500. The great distinction in the last case, shows clearly from what quarter the severest competition with our own arts was expected. A bona fide inventor may secure patent, though the subject has been discovered and used abroad, provided he had no knowledge of it, and no description had been given in any publication. This is a liberal extension of the privilege. The first use of the invention attracts the patent, notwithstanding a prior discovery can be proved, but without use. A surreptitious one by

another, will not affect the rights of the real inventor on his application for patent.

The American law upon this subject is, upon the whole, less restrictive than that of any other nation, and appears, at the same time, to hold out ample encouragement to genius and enterprise. The English law has the advantage of not discriminating for country; for the statute of James gives title to all, if the "true and first inventors of any manner of new manufactures within the realm, which others, at the time of granting the patent, did not use." If the discovery or invention be new in England, this is sufficient, though long known and in use abroad. They hold that one may discover by travel as well as by thought. English inventions are taxed much higher than ours in the fees of patent right. The French, Spanish and Austrian laws follow, in the main, those of Britain. The whole subject of patents is one of great subtlety, and it is said on high authority not to be inaptly termed the metaphysics of the law. Men have exhausted whole fortunes in the protection of these rights by ceaseless litigation, of whom Whitney, the cotton-gin inventor, is a conspicuous example. Others, rather than encounter such difficulties, or rather than make known in petition the secret of their discovery or art, have preferred to risk it without patent at all. Few patents protect for their full term. New and better inventions or processes displace them, or what is worse, the fraudulent acts of others deprive them of all value. The hope of gain and difficulty of detection are powerful incentives to encroachment, and they will not be resisted when the invention is very important and valuable. Other inventions will be protected in a degree by their own insignificance, on the same principle that a robber will not seek a garret, nor will the blood of a "hoarse lawyer" be shed by conspirators, as Juvenal felicitously expresses it:

"Nec unquam
Sanguine cauidici, maduerunt rostra, pusilli."

The law of Congress, of 1836, established the patent office, intended as a repository for models of all the inventions patented from time to time. It is said to have given great facilities, in the classification and arrangement in rooms and galleries, for a beneficial and favorable display of these models and specimens of composition, and of fabrics and other manufactures and works of art and machines, and implements of agriculture, &c., &c. The building soon after was destroyed by fire, but the contents have been largely restored by appropriations for the purpose, so that at this day it presents one of the most extraordinary museums in the country, exhibiting in the highest developments the ingenuity of our countrymen, which no circumstances can control, and which seems beyond all comparison or limit. Previous to 1836 we had issued double the

* Kent's Commentaries, vol. II.

number of patents issued by England or France in the same time, and the disproportion since then must be vastly greater. The building in which this display is made has already become of too contracted dimensions for its purpose. The purposes of such a collection are the highest imaginable. Next to the publication and distribution of adequate descriptions, from year to year, of the progress of invention, is the preservation of plans and models in one common building. We shall furnish, in this manner, a meet field for the studies of future times. Genius may repair thither, even as it repairs to Rome, to catch the inspiration of Grecian statuary, or the rare perfection of Italian art. In every sphere the masters must be studied. We learn to invent from a familiarity with inventions. Before aspiring to add to the results of human skill, we must be acquainted with those results. How frequently are years of toil and labor expended upon inventions, which are afterward discovered to have been made long before? An ingenious friend once exhibited to us a skillful contrivance in art which was valuable and new to him, which had caused much thought and labor, and of which he was clearly the inventor, but upon careful reference to encyclopedias of art, the machine was there discovered minutely described. If our reason must be stimulated by the trainings of logic, so our inventive faculties must be stimulated by a training in the study of inventions.

VIRGINIA.*—EARLY HISTORY—EDUCATION—SCHOOLS AND COLLEGES—GOVERNMENT—RESOURCES—INTERNAL IMPROVEMENTS—SLAVERY, ETC.—It is well known that the state which bears the name of Virginia, was so called in honor of Elizabeth, the virgin Queen of England, under whose auspices an expedition was set on foot by Sir Walter Raleigh and other adventurous spirits, in search of gold. Whether the *sacra fames auri*, or the spirit-stirring influences of religious fanaticism, have been most conducive to great enterprises, is a subject on which much speculation might be indulged. For our own part, we are inclined to the opinion that, as long as man is the same commodity-loving animal that we have always found him, there is no hope that he will place virtue *before* money in the catalogue of his aspirations. But we digress. Raleigh claimed, in the name of his sovereign, all that tract of land extending from the Atlantic to the Pacific Ocean, a considerable portion of which is now divided into flourishing states in the northwestern portion of the Union. It is not our purpose to enter into a discussion of the history of the

"Old Dominion,"* previous to the convention which determined the boundaries of the states; nor will we discuss her title to all that she claimed. We think that her present boundaries are amply sufficient. She is the largest state in the Union, and has contributed her full quota of great men in illustrating the glory of the republic in arms and eloquence. The fame of Washington and Henry have reached the farthest limits of the civilized world, and are safe for immortality. Seven out of fourteen presidents have been natives of her soil, and her whole political career has been a practical illustration of her motto—"Eternal Hatred to Tyranny."

Her northern boundary extends to the Ohio River and Pennsylvania—her eastern to the Potomac and the Chesapeake Bay—her southern to North Carolina and Tennessee; and her western boundary to the Ohio River and Kentucky. The surface of the state presents several parallel chains of mountains, commencing about 180 miles from the sea, and running in a southwest direction. The Alleghanies have their widest base in this state, occupying the central region from 80 to 100 miles in breadth. Between these ridges are valleys of the greatest fertility. The eastern section is generally level—the soil sandy and not very productive, except along the rivers, which is exceedingly fertile. Above the falls of the river, the land is better, and admits of profitable cultivation. The section west of the Alleghanies is mountainous and broken, interspersed with rich valleys, and limestone country. In the low alluvial parts, it is hot and unhealthy. The summers are long and oppressive, and the winters mild and agreeable. In the mountainous districts, the weather is considerably colder, and the air more salubrious. Virginia is 370 miles long and 200 broad, at its greatest width, containing 64,000 square miles, or 40,960,000 acres. She numbers at present no less than ten regular colleges and universities, and there is great room for improvement in every department of education. It may not be uninteresting to give a brief sketch of some of these colleges.

William and Mary College is, with the ex-

* 1. A History of Virginia, from its discovery and settlement by Europeans, to the present time. By Robert R. Howison. Two volumes. New-York & London: Wiley & Putnam, 1848.

2. Historical Collections of Virginia, by Howe, 1817, &c., &c.

* If it be not beneath the dignity of history, it may be interesting to our readers to state how Virginia came to acquire the soubriquet of the "Old Dominion." After the death of Charles I., and the usurpation of Cromwell, the British colonies in America were required to swear allegiance to the Protector. But Virginia persisted in retaining her loyalty to the *Old Dominion*—that is, to the dynasty of the Stuarts, which was represented in the person of Charles II., who had taken refuge in Holland. After the death of Cromwell, Charles was recalled, and proclaimed King of England, Scotland, Ireland, and Virginia, and ordered her arms to be quartered with those of Great Britain as an independent member of the Empire. This was done in compliment to Virginia, who had invited him to reign over her, but the death of Cromwell restored him to the throne of his ancestors. We think that Virginia was fortunate; for surely a more worthless tyrant never held the reins of empire.

ception of Harvard University, the oldest literary institution in the country. It is distinguished for its large proportion of graduates who have risen to eminence, some of whom have held the highest stations in the nation. It was founded in 1692, in the reign of William and Mary, who granted it a donation of 20,000 acres of land. In 1793, the Assembly ordered that it should be built at Williamsburg. "The college received a penny a pound on certain tobaccos exported from Virginia and Maryland, which had been levied by the statute of the 25th of Charles II. The Assembly also gave it, by temporary laws, a duty on liquors imported, and skins and furs exported. From these resources, it received upwards of £3,000. The buildings are of brick, and sufficiently large for the accommodation of 100 students. By its charter, dated the 3th of February, 1692, it was placed under the direction of not less than twenty visitors, and to have a president and six professors, who were incorporated. It was formerly allowed a representative in the General Assembly under this charter—a professorship of the Greek and Latin languages—a professorship of mathematics and one of moral philosophy, and two of divinity, were established. To these were annexed a considerable donation by the Hon. Robert Boyle, of England, a sixth professorship for the instruction of the Indians, and their conversion to Christianity." Its first president was the Rev. James Blair, D.D.; Thomas R. Dew, whose able essay on the Institution of Slavery entitles him to the lasting gratitude of the whole South, has also presided in the chair. *Thomas Jefferson* was a graduate of this college. There were in 1840, 98 students in the collegiate department, and 32 in the law school.

Hampden Sidney College, the next in order, was established in the year 1774, and named after those martyrs who perished in the good old cause—John Hampden and Algernon Sidney. It was chartered in 1783, and has ever been supported by the private munificence of public-spirited individuals. It has an elevated, healthy and pleasant situation, one mile from the Court-house, and 80 from Richmond. Although the institution has had to encounter many difficulties on account of funds, yet it has generally been in successful operation, and has educated upwards of 2,000 young men, many of whom have been of eminent usefulness, and some of great abilities. More instructors have emanated from this institution than any other in the southern country. Connected with the college are a literary and philosophical society, and an institute of education. There are also several societies among the students, which are of great assistance to them in the prosecution of their studies. The legislative government of the college is vested in 27 trustees, to fill up vacancies in their own body. By the census of 1840, it contained 65 students, and 8,000 volumes in its library.

The first president was the Rev. S. S. Smith, and the last Lewis S. Green, D. D., a gentleman of distinguished literary attainments.

The *Union Theological Seminary* is located in the immediate vicinity of Hampden Sidney College. "The institution had its origin in efforts made by the Presbytery of Hanover and the Synod of Virginia, as early as 1812, to give their candidates for the ministry a more complete theological education. It did not, however, go into operation in a regular form, until the year 1824. In 1842, it had three professors, twenty students, one hundred and seventy-five graduates, and a carefully selected library of about 4,000 volumes."

The *University of Virginia* is about one mile from Charlottesville. It was erected and endowed by the state in 1825, and owes its origin and peculiar organization to Mr. Jefferson. - "It has a fine collection of buildings, consisting of four parallel ranges about six hundred feet in length, and two hundred feet apart, suited to the accommodation of nine professorships and upwards of two hundred students, which, together with the real estate, cost over \$300,000. It possesses valuable libraries, amounting to 16,000 volumes, and is amply provided with philosophical and chemical apparatus, together with a fine cabinet of minerals and fossils, and an anatomical and miscellaneous museum. The Observatory, a short distance from the University, is furnished with the requisite astronomical instruments. The plan of the University differs materially from that of any other institution in the Union. The students are not divided into four classes, with a course of studies embracing four years, but the different branches are styled *schools*, and the student is at liberty to attend which he pleases, and *graduate* in each when prepared. In order to attain the degree of "Master of Arts in the University of Virginia," the student must graduate in the several schools of mathematics, ancient languages, moral philosophy, natural philosophy, chemistry, and in some two of the modern languages. The chairman of the faculty is annually chosen from the faculty by the board of visitors. This board is appointed by the governor and council every four years, and chooses its own rector. This institution is, in every respect, organized and justly regarded as a University of the first class." The number of students for the year 1850 is two hundred and twelve. Gessner Harrison, Chairman of the Faculty.

Washington College, at Lexington, was founded in 1812. Its present number of students is about eighty. It contains a library of 5,000 volumes. *Randolph Macon College* was founded at Boydton, in 1832. Students about 145. Its library contains about 6,000 volumes. *Emory and Henry College* is ten miles from Abingdon, in a beautiful and secluded situation. It was founded in 1838, under the patronage of the Holston Annual Conference of the Methodist Episcopal Church.

"It is yet in its infancy, but is efficiently organized, and is already exerting a salutary influence upon the cause of education in Southwestern Virginia. The faculty consists of a President, L. C. Garland, A. M., who is the professor of moral and mental science, two other professors, and a tutor; number of pupils about 125, including those in the preparatory department. The name Emory and Henry was given in honor of Patrick Henry and the Rev. Bishop Emory, of the M. E. Church." *Rector College*, at Prunty Town, was founded in 1839. Its present number of students is about 55. President, Charles Wheeler, A. M. *Bethany College* was founded by Dr. Alexander Campbell, in 1841. Its instructors are the president, (Dr. Campbell,) and four professors. It is in a flourishing condition, numbering about 100 students. The buildings prepared for their reception are spacious and convenient. There are theological schools at Richmond, in Prince Edward County, and in Fairfax County. There is also a Military Institute at Lexington, established in 1839, of which Col. F. H. Smith is superintendent. It numbers at present about 120 cadets. A *Lunatic Asylum* and an *Institution for the Deaf, Dumb and Blind*, have been recently established at Staunton. The latter place contains two female seminaries, two male academies, one Presbyterian, one Episcopalian, one Lutheran, and one Methodist Church, and about 2,200 inhabitants.

Schools.—There are in 122 counties and towns, 3,394; total number of poor children, 26,472. Amount expended for tuition of poor children, including books, compensation to officers, and all other expenses, \$61,830 59. Average actual attendance of each poor child at common schools, 57½ days, equal to nearly 11½ weeks. Average amount paid for tuition of each poor child, \$2 33. Average cost per diem of tuition and expenses of each poor child, 4½ cents.

GOVERNMENT.

	Term ends	Salary
John B. Floyd, of Washington Co., <i>Governor</i>	Jan. 1, 1852..	\$3,333
Raleigh T. Daniel, of Richmond, <i>Coun. of State</i>	March 31, 1851...	1,000
John F. Wiley, of Amelia Co., <i>Coun. of State</i>	" 31, 1852 ..	1,000
John M. Paton, of Richmond, <i>Coun. of State</i>	" 31, 1853....	1,000
Robert Butler, of Isle of Wight Co., <i>Treasurer</i>		2,000
Robert Johnston, of Harrison Co., <i>Auditor of Public Accounts</i>		2,000
James Brown, jr., of Richmond, <i>2d Auditor, and Supt. Lit. Fund</i>		2,000
Stafford H. Parker, of Richmond, <i>Register of Land Office</i>		2,000
Sidney S. Baxter, of Richmond, <i>Attorney General</i>		1,000
W. H. Richardson, of Henrico Co., <i>Sec. of Commonwealth, Adj. Gen'l and Librarian</i>		1,720
Thomas S. Lawson, of Richmond, <i>Clerk of Council and Supt. of Weights and Measures</i>		1,300
Charles S. Morgan, of Richmond, <i>Supt. of Penitentiary</i>		2,000

Wm. H. Dennis, of Charlotte Co., *Speaker of Senate*.
 Henry L. Hopkins, of Powhatan, " " *House*.
 George W. Mumford, of Richmond, *Clerk of House*.
 Joel Pennybacker, of Shenandoah Co. " " *Senate*.

The governor, treasurer, auditor, 2d auditor and register of the land office are, *ex officio*, members of the board of public works, literary fund, northwestern and southwestern turnpike roads, and Blue Ridge railway company. They do not receive extra compensation for this service.

JUDICIARY.

Court of Appeals.

	Elected	Salary
Wm. H. Cabell, of Richmond, <i>President</i>	1830	\$5,750
Francis T. Brooks, of Spotsylvania Co., <i>Judge</i>	1830	2,500
John J. Allen, of Botetourt Co., <i>Judge</i>	1840	2,500
Briscoe G. Baldwin, of Staunton, ".....	1842	2,500
Wm. Daniel, of Lynchburg, ".....	1846	2,500
Joseph Allen, of Richmond, <i>Clerk of Eastern Circuit</i>		1,000
John A. North, of Lewisburg, <i>Clerk of Western Circuit</i>		1,000

The judges are entitled to receive, in addition to their salaries, 25 cents a mile for necessary travel. The Court of Appeals holds two sessions annually; one at Lewisburg, Greenbrier county, for the counties lying west of the Blue Ridge, commencing on the 2d Monday in July, and continuing ninety days, unless the business shall be sooner dispatched; the other at Richmond, for the counties lying east of the Blue Ridge, commencing at such times as the court may, from time to time, appoint.

Superior Court.—The state is divided into ten judicial districts, and each district into two circuits, except the fourth, which has three. The third circuit of the fourth district is the twenty-first district of the state, containing but a single court, called the "Circuit Superior Court of Law and Chancery for the County of Henrico and City of Richmond." In this court there are two judges, one on the law side, the other on the chancery side, each with a salary of \$2,000. On the disqualification of either of the two judges now attached to this court, his duties are to devolve on the other, without increase of salary. In the other circuits, each judge has chancery and law jurisdiction, with a salary of \$1,500, and \$4 for every 20 miles of necessary travel. A Circuit Superior Court of Law and Chancery is held twice every year, in each county, and in some corporations. The five senior judges, namely—Judges Smith, Field, Lomax, Thompson and Leigh, of the Old General (now Circuit) Court, constitute a special Court of Appeals, and also the General Court, which holds two terms every year, at the court-house, in Richmond. One term begins the last Monday in June, and the other the last Monday in December. The General Court has appellate jurisdiction in the last resort in criminal cases; also original jurisdiction of probates and administrations; and where the judges of the

Court of Appeals proper are qualified by interest or otherwise, some of them sit as a Special Court of Appeals.

County courts.—A court sits in each county every month, held by four or more justices of the peace. These courts, held by plain farmers or country gentlemen, have a jurisdiction wider than that of any other court in the state. Any one justice can hold a court in cases under \$20 in value. At the monthly or quarterly sessions, held by four or more justices, deeds and wills may be proved, and chancery matters and suits at common law be heard, with a right of appeal to a Superior Court. These courts, exclusively, try slaves for all offences; and they examine free persons, charged with felony, previously to their trial in the Circuit Court. Free negroes and Indians are on the same footing with slaves.

JUDGES OF THE CIRCUIT COURTS.

Judges	Residence
1. Richard H. Baker,.....	of Nansemond Co.
2. John W. Nash.....	of Powhatan Co.
3. George P. Scarborough.....	of Accomac.
4. J. B. Christian.....	of Charles Co.
5. John T. Lomax.....	of Fredericksburg.
6. John W. Tyler.....	of Pr. William's Co.
7. John B. Clopton.....	of Richmond.
8. Daniel A. Wilson.....	of Cumberland.
9. William Leigh.....	of Halifax Co.
10. N. M. Taliaferro.....	of Franklin Co.
11. Richard M. Field.....	of Culpeper Co.
12. L. P. Thompson.....	of Staunton.
13. Isaac R. Douglas.....	of Morgan Co.
14. Daniel Smith.....	of Rockingham Co.
15. Benjamin Estill.....	of Wythe Co.
16. James L. Brown.....	of Wythe Co.
17. Edward Johnston.....	of Botetourt Co.
18. Matthew Dunbar.....	of Kanawha Co.
19. D. W. McComas.....	of Wythe Co.
20. Joseph L. Fry.....	of Wheeling.
21. { John Robertson } { John S. Caskie }	of Richmond.
22. George H. Lee.....	of Harrison Co.

FINANCES.

The aggregate debt of Virginia, on the first of February, 1850, was as follows:—

Revolutionary war debt, bearing 6 per cent. interest.....	\$24,039 17
War debt of 1812, bearing 7 per cent. interest.....	319,000 00
Internal Improvement debt, bearing 6 per cent. interest.....	7,503,916 85
Internal Improvement debt, bearing 5 per cent. interest.....	1,065,600 00
Internal Improvement debt, bearing 5½ per cent. interest.....	25,300 00
Debt for subscription to banks.....	450,107 00
	\$9,387,963 02

But of this there is held by state agents, under the control of the legislature—

By literary fund.....	\$1,096,106 50
By Board Public Works.....	366,662 41
	1,462,768 91

Actual outstanding debt of Virginia. \$7,924,994 11

The net receipts from taxes during the

year were \$606,599 83, being an increase over the previous year of \$9,608 39.*

"The mineral wealth of Virginia is very great. Gold, copper, lead, iron, coal, salt, limestone and marble are found, together with a number of valuable mineral springs. An attention to the business of mining has recently been excited. The belt of country in which gold is found, extends through Spotsylvania county and the adjacent country, and in a south-west direction passes into North and South Carolina, Georgia and Alabama. The gold in this state is not sufficiently concentrated to render it profitable, excepting in a few places, to engage in mining it. The coal fields in Virginia are very extensive, and afford both the bituminous and anthracite. Large quantities have been obtained and exported from the vicinity of Richmond. Salt springs have been found in various places, and salt has been extensively manufactured on the Great Kanawha River, near Charleston. The state abounds in mineral springs, which are much resorted to: the principal are the *White and Blue Sulphur*, in Greenbrier; the *Salt and Red Sulphur*, and *Sweet*, in Monroe; *Hot and Warm*, in Bath; *Berkely*, in Morgan; *Fauquier White Sulphur*, in Fauquier; *Shannondale*, in Frederick; *Alum*, in Rockbridge; *Jordan's White Sulphur*, in Frederick; *Red*, in Alleghany; *Grayson*, in Carroll; *Botetourt*, in Roanoke; *Holston*, in Scott; *Augusta Springs*; and *Daggus Springs*, in Botetourt.†

The state is divided into 123 counties, and two districts, eastern and western. The eastern district comprises that part of the state east of the Blue Ridge, and has 67 counties. Population in 1840, whites, 369,398; free colored, 42,294; slaves, 395,250; total, 806,942. The western district comprises that part of the state west of the Blue Ridge, and has 56 counties. Population, whites, 371,570; free colored, 7,548; slaves, 53,737; total, 432,855.

The staple productions of the state are wheat and tobacco. The exports of the state, in 1840, amounted to \$4,778,220; and the imports to \$545,685. There were 31 commercial, and 64 commission houses engaged in foreign trade, with a capital of \$4,299,500; 2,736 retail dry goods and other stores, with a capital of \$16,684,413; 1,454 persons employed in the lumber trade, with a capital of \$113,210; 931 persons engaged in internal transportation, who, with 103 butchers, packers, &c., employed a capital of \$100,680; 556 persons employed in the fisheries, with a capital of \$28,383.

The manufactures of Virginia are not so extensive as those of some states inferior to it in territory and population. There were

* For above statistics, we are indebted to American Almanac, 1851.

† Sherman & Smith's Gazetteer.

in 1840, domestic or family manufactures to the amount of \$2,441,672; 41 woolen manufactories, and 47 fulling-mills, employing 222 persons, producing articles to the amount of \$147,792, with a capital of \$112,350; 22 cotton manufactories, with 42,262 spindles, employing 1,816 persons, producing articles to the amount of \$446,063, with a capital of \$1,299,020; 42 furnaces, producing 18,810 tons of cast-iron, and 52 forges, &c., producing 5,886 tons of bar-iron, the whole employing 1,742 persons, and a capital of \$1,246,650; 11 smelting houses, employing 131 persons, and producing gold to the amount of \$51,753, employing a capital of \$103,650; 5 smelting houses, employing 73 persons, and producing 878,648 pounds of lead, employing a capital of \$21,500; 12 paper manufactories, producing articles to the amount of \$216,245, and other paper manufactories, producing \$1,260, the whole employing 181 persons, and a capital of \$1,526,080; hats and caps were manufactured to the amount of \$125,773, and straw bonnets to the amount of \$14,700, the whole employing 340 persons, and a capital of \$85,640; 660 tanneries, employing 1,422 persons, and a capital of \$333,141; 982 other leather manufactories, as saddleries, &c., producing articles to the amount of \$826,957, and employing a capital of \$341,957; 4 glass houses, and 2 glass-cutting establishments, employing 164 persons, producing articles to the value of \$146,500, with a capital of \$132,000; 33 potteries, employing 64 persons, producing articles to the amount of \$31,380, with a capital of \$10,225; 36 persons produced drugs, paints, &c., to the amount of \$66,333, with a capital of \$61,727; 445 persons produced machinery to the amount of \$429,858; 150 persons produced hardware and cutlery to the amount of \$50,504; 262 persons manufactured 9,330 small arms; 40 persons manufactured granite and marble to the amount of \$16,652; 1,004 persons produced bricks and lime to the amount of \$393,253; carriages and wagons were manufactured to the amount of \$647,815, employing 1,592 persons, and a capital of \$311,625; 1,454 distilleries produced 865,725 gallons, and 5 breweries produced 32,961 gallons, employing 1,631 persons, and a capital of \$187,215; 764 flouring-mills, 1,041,526 barrels of flour, and with other mills employed 3,964 persons, producing articles to the amount of \$7,355,199, with a capital of \$5,184,669; ships were built to the amount of \$136,807; 675 persons manufactured furniture to the amount of \$289,391; 403 brick or stone, and 2,604 wooden houses were built, employing 4,694 persons, and cost \$1,367,393; 50 printing offices, and 13 binderies; 4 daily, 12 semi-weekly, and 35 weekly newspapers, and 5 periodicals, employing 310 persons, and a capital of \$168,850. The whole amount of capital employed in manufactures in the state was \$11,360,861.

The Baptists, the most numerous religious denomination, have about 437 churches; the Presbyterians 120; the Episcopalians 65 ministers; the Methodists 170. There are also a few Lutherans, Catholics, Unitarians, Friends and Jews.

In January, 1840, there were in this state 8 banks and branches, with a capital of \$3,637,400, and a circulation of \$2,513,412. At the close of the same year, the public debt amounted to \$6,857,161. There is a State Penitentiary located at Richmond.

The first Constitution was formed in 1776. This was altered and amended by a Convention assembled for that purpose, in 1830. The executive power is vested in a governor, elected by the joint vote of the two houses of the General Assembly. He is chosen for three years, but is ineligible for the next three. There is a Council of State, elected in like manner, for three years, the seat of one being vacated every year. The senior councillor is lieutenant-governor. The senators can never be more than thirty-six, and the delegates, than one hundred and fifty; and both are apportioned anew among the counties every ten years, commencing with 1841. The senators were elected for four years, and the seats of one-fourth of them are vacated every year. The delegates are chosen annually. All appointments to any office of honor, trust or profit, by the legislature, are given openly, or *viva voce*, and not by ballot. The judges of the Supreme Court of Appeals and of the Superior Courts, are elected by the joint vote of both houses of the General Assembly, and hold their offices during good behavior, or until removed by a joint vote of two-thirds of the legislature.

The right of suffrage is extended to every resident white male citizen of twenty-one years of age, entitled to vote by the former constitution; or who owns a freehold valued at \$25; or a joint interest in a freehold to that amount; or who has a life-estate, or a reversionary title to land valued at \$50, having been so possessed for six months; or who shall own, or be in occupation of a leasehold estate, having been recorded two months, for a term not less than five years, to the annual value or rent of \$200; or who for twelve months shall have been a housekeeper and head of a family, and paid the taxes assessed by the commonwealth.*

Virginia has undertaken several important works of internal improvement, by chartering private companies, several of which have

* A Convention has lately been in session in Virginia, and framed a new Constitution for the state, which greatly innovates upon the old one in the matters of suffrage, representation, &c. These changes have long been clamorously demanded by the people of the western district, as it is called, the state, who being but to a limited extent slaveholders, were not well pleased with the federal basis of representation. We have not before us a copy of the new constitution, and therefore cannot speak precisely of its provisions.

been liberally aided by the state. The Dismal Swamp Canal connects Chesapeake Bay with Albemarle Sound, extending from Deep Creek to Joyce's Creek, twenty-three miles, at a cost of \$879,864. It has branches of eleven miles. The Alexandria Canal extends seven and a quarter miles, from Georgetown to Alexandria. The James River and Kanawha Canal extends one hundred and forty-six miles, from Richmond to Lynchburg. The Richmond, Fredericksburg and Potomac Railroad extends seventy-five miles, to Aquia Creek. Louisa branch, twenty-five miles, from Richmond, proceeds forty-nine miles, to Gordonsville. Richmond and Petersburg Railroad, from Richmond, extends twenty-three miles, to Petersburg. Petersburg and Roanoke Railroad extends from Petersburg, fifty-nine miles, to Weldon. Greenville Railroad extends from near Hicksford, for eighteen miles, to Gaston, North Carolina. City Point Railroad extends from Petersburg, twelve miles, to City Point. Chesterfield Railroad extends from Coal Mines, thirteen and a half miles, to Richmond. Portsmouth and Roanoke Railroad extends from Portsmouth, eight miles, to Weldon, North Carolina. Winchester and Potomac Railroad extends from Harper's Ferry, thirty-two miles, to Winchester.*

* We insert the following from the Message of Governor Floyd. (See De Bow's Review, vol. viii., 285.)

VIRGINIA INTERNAL IMPROVEMENTS.

Situated about midway between the northern boundary of the United States and the Gulf of Mexico, we escape in a great degree the rigors of the northern winters, and the scorching heat of the south. Our eastern border upon the river Potomac and the Chesapeake Bay, is dotted with harbors unsurpassed in safety and capacity. The fleets of the whole earth could ride safely at anchor within them. Our western border is washed for several hundred miles by the Ohio River, and, at other points along it, the rich region of Kentucky and the fertile valley of the Tennessee are of easy access. Besides this, the country lying between the eastern and western boundaries of which I speak, is unsurpassed for its fertility, and the variety of its products. Minerals of every description are to be found, of the most superior quality, and in quantities absolutely inexhaustible; whilst the earth in which they are imbedded, unlike other mineral regions, is of the most desirable character for husbandry. Let this country be penetrated by improvements connecting our seaports with the Ohio, with Kentucky, and the valley of Tennessee, and it will infuse a spirit of enterprise into the population which must, in a short time, fully develop all of our resources.

The topography of the country is most favorable for the completion of those great connecting lines. From tide water to the Mississippi River at Memphis, there is no mountain barrier interposing a serious difficulty to the construction of a rail-road, whilst the region traversed by it is inferior to none of the same extent, for mineral and agricultural resources, upon the continent of North America. The valley of the Tennessee, one of the most magnificent of all those washed by the waters of the West, the annual commerce of which is worth thirty-five millions of dollars, will find in this road an outlet for its rich products to the Atlantic. And a cargo of merchandise, landed at Norfolk or Richmond, will be safely transported to the city of Memphis, ready for distri-

The soil in the tide-water country is generally poor, producing Indian corn, oats and peas. Wheat is raised in some parts of it, and a little rice in the swamps in its southern part. Between tide water and the mountains is the tobacco country; but in the northern upland counties wheat has extensively superseded tobacco; and south of James River, sufficient cotton is raised for home consumption. The south eastern counties produce apples and peaches in great abundance. Among the mountains, the farmers raise large numbers of cattle and hogs. Indian corn is cultivated throughout the state. The country west of the mountains, towards the Ohio, is rough and wild—sometimes, but not generally, fertile; but very rich as a mineral region.

RICHMOND, the capital of the state, is beautifully situated on the James River, about 130 miles from the entrance of the Chesapeake Bay. It is ornamented with many elegant structures, and is supplied with water forced up from the river to a reservoir above the level of the most elevated sites. The capitol is honored with a statue of Washington, executed by Houdon, taken from life, and considered a perfect likeness. Its climate is healthy, and its markets are abundantly supplied with fruits. The pop-

ulation upon those mighty waters in less than ten days. "The Virginia and Tennessee" railroad will effect this great object, when it shall be finally completed; and it affords me great pleasure to say, we are warranted in the belief that it will be prosecuted with energy and dispatch.

The James River and Kanawha Canal, having for its object the connection of tide water with the Ohio River, has, for a good many years, been generously sustained by appropriations of public money; and, although it has met with strong opposition, it still maintains itself steadfastly in the approbation of all well-informed, reflecting men. The results to Virginia, which are to flow from its completion, will strike the mind, upon a little reflection, as really stupendous. I have no doubt but that the commerce passing through this canal, will rapidly build up the towns of Virginia to the magnitude of the first American cities, and will rescue us, in a great measure, from the miserable consequences of our past apathy and inaction.

The effects upon the prosperity and destiny of New-York, produced by the completion of the Erie Canal, opening the commerce of the lakes to that city, are perfectly familiar to every one: the daily increasing importance of it is also quite as well understood. Without the Erie Canal, the city of New-York would have been second still to Philadelphia. Great as the advantages of this work unquestionably are, those of the James River and Kanawha Canal are undoubtedly superior. It possesses the striking advantage of lying five degrees south of the great northern work, and, therefore, free from the ice which obstructs the navigation there for so large a portion of the year. It touches the Ohio River far south of any water communication from the Atlantic whatever, and at a point south of which there can be across the country no water connection. It will, after the first of November, command all the trade of a great part of Ohio, Kentucky, Indiana, Illinois, and Missouri, and most probably of those regions lying still higher up toward the sources of the Missouri and Mississippi; for, after that period, it is unsafe to send produce north, in the direction of Boston, New-York, or

ulation of Richmond was about 20,000 in 1840, and for the last few years has increased rapidly. It contains extensive manufactories of tobacco, flour, iron, cotton and woollens. We insert a comparative statement of the

	1841	1842	1843
Tobacco, hhds.	34,662	32,565	36,236
Stems.	6,172	3,245	2,000

These exports went to Cowes, London, Liverpool, Glasgow, Havre, Bordeaux, Bremen, Rotterdam, Amsterdam, Marseilles, Trieste, Genoa, Rio, Pernambuco, &c., &c.

exports of tobacco, cotton and flour from Petersburg and Richmond for three years, commencing October 1st, 1840, and ending 30th September, 1841, 1842, 1843 :

	1841	1842	1843
Cotton, bales.	5,152	5,678	1,817
Flour, bbls.	47,505	48,464	73,726

Exports, foreign and domestic, in each year from 1843 to 1848, the years ending on the 30th of September, are as follows :

	1843	1844	1845	1846	1847	1848
Inspected, hhds.	56,788	45,855	51,126	42,680	51,726	36,725
Stock, 30th Sept.	13,420	14,362	21,873	19,160	15,363	13,959
Export to—						
London.	4,941	1,336	1,187	3,126	1,572	2,145
Liverpool.	4,265	5,367	4,717	6,615	3,328	4,622
Bristol and Glasgow.	1,036	351	664	1,205	553	1,434
Cowes.	5,459	1,075		750		
France.	4,553	605	4,543	1,623	5,333	728
Belgium.	5,441	1,800	1,018	1,698	774	1,501
Bremen.	3,013	5,155	1,281	1,056	844	895
Holland.	6,338	3,818	1,842	2,092	627	236
Italy.	452	564	2,048	2,388	2,092	905
Gibraltar.		100		368	522	695
Hamburg.		397	435			
Other ports.	50	26	23	36	15	24
Total.	35,528	20,594	17,752	20,957	16,560	13,175
Stock on hand, October 1st, 1848.					hhds. 13,959	
Inspected, year ending September 30th, 1849.					" 44,904	
						58,863

EXPORTS.

Great Britain.	9,667
France.	3,267
Cowes, for orders.	551
Belgium.	1,478
Bremen.	1,045
Holland.	663
Italy, Spain, &c.	2,972

Total. 19,643

Import of manufactured tobacco at New-York, from 1st January, 1849, to 31st December inclusive :

	1840	1850	Increase ^o
EAST—Whites.	360,398	404,371	34,973
Free colored.	42,393	45,956	3,563
Slaves.	395,251	412,738	17,487
Total, East.	806,942	863,065	56,023
WEST—Whites.	371,560	494,763	123,203
Free colored.	7,548	7,801	253
Slaves.	53,737	63,234	9,497
Total, West.	432,845	565,978	132,953
Grand Total.	1,239,787	1,429,044	188,976

Philadelphia. A striking and peculiar advantage presented by this line, is its continuity. There is no necessity whatever for transhipment. We will see canal boats, laden at the falls of St. Anthony or Council Bluff, discharging their cargoes at Lynchburg, Richmond and Norfolk. The extent and fertility of the region through which this work will pass, is unsurpassed by any accessible country within the territories of the United States. Super-added to this, the rivers, canals, and rail-roads, emptying into and resting upon the Ohio and Mississippi, will bring, from the remote interior, which in every direction they penetrate, their contributions, to swell still higher the rich tide of commerce flowing through the heart of the commonwealth. The trade in Indian corn, which has recently sprung up, and

is increasing with such surprising rapidity between Europe and America, will be almost monopolized by this line, and will, of itself, presently build up and sustain a great city. Norfolk must be the point for its shipment, for it can reach there and be sent away without the injury which it is sure to sustain from detention at the more southern points. Indeed this line will monopolize, in a great measure, the transportation of all the principal articles of food which are produced in the Mississippi valley for consumption in our Atlantic states and in Europe. It is a fact universally known, that provisions of every kind suffer injury from the climate during their transit by New-Orleans and through the Gulf.

* Vide De Bow's Review, vols. i. to x.

Before drawing our article to a conclusion, we will give a few extracts from the work of Mr. Howison, which we have had under review. He writes with good sense and much candor, which we admire; but we must beg leave to differ with him in the matter of *slavery*—to which he seems mainly to attribute the decline, and perhaps the extinction of his native state. We coincide with him entirely in the importance of a more thorough system of education. He says:

"It is with pain we are compelled to speak of the horrible cloud of ignorance that rests upon Virginia. In the eastern section there are twenty-nine thousand eight hundred and sixty-three, and in the western, twenty-eight thousand nine hundred and twenty-four—making a total of fifty-eight thousand seven hundred and eighty-seven white persons, over twenty years of age, who cannot read or write. This, however, is not all. It is computed that there are in the state 166,000 children, between seven and sixteen years of age, and therefore fit for school. Of these, about 28,000 poor children attend the Free and Lancasterian

schools—an average of twelve weeks in the year for each child. Twelve thousand more children are sent to colleges, academies, and classical schools. The remaining one hundred and twenty-six thousand attend no school at all, except what can be imparted by poor and ignorant parents!

"This deplorable condition has been long felt and deplored by Virginia's most virtuous sons. Efforts have been made to ameliorate it. Education conventions have assembled, and many animated debates have taken place. The Legislature have moved from time to time, and during the session of 1845-6, its movement was decided and beneficial. Nevertheless, the evil remains almost untouched. We pretend not to suggest any remedy. But it will be pertinent to the subject to add, that in the whole State of Massachusetts—containing, in 1840, seven hundred and thirty-seven thousand six hundred and ninety-nine persons, there were but four thousand four hundred and forty-eight white persons, over twenty years of age, who could neither read nor write.

COMMERCE OF VIRGINIA.

Foreign Imports,			
1821.....	\$1,078,490	1835.....	\$691,255
1822.....	861,162	1836.....	1,106,814
1823.....	881,810	1837.....	813,823
1824.....	639,787	1838.....	577,142
1825.....	553,562	1839.....	913,462
1826.....	635,138	1840.....	515,085
1827.....	431,765	1841.....	377,237
1828.....	375,238	1842.....	316,705
1829.....	395,355	1843.....	187,062
1830.....	405,739	1844.....	267,654
1831.....	488,522	1845.....	230,470
1832.....	553,639	1848.....	215,081
1833.....	690,391	1849.....	241,935
1834.....	837,325	1850.....	426,549

Foreign Exports,			
1821.....	\$3,079,209	1835.....	\$6,064,063
1822.....	3,217,389	1836.....	6,192,040
1823.....	4,006,788	1837.....	3,702,714
1824.....	3,277,564	1838.....	3,986,228
1825.....	4,129,520	1839.....	5,187,196
1826.....	4,596,732	1840.....	4,778,220
1827.....	4,657,938	1841.....	5,630,286
1828.....	3,340,185	1842.....	3,750,366
1829.....	3,787,431	1843.....	1,954,510
1830.....	4,791,644	1844.....	2,942,279
1831.....	4,150,475	1845.....	2,104,584
1832.....	4,510,650	1848.....	3,681,412
1833.....	4,467,587	1849.....	3,373,738
1834.....	5,483,098	1850.....	3,415,646

The exports of Virginia were about the same per annum from 1791 to 1800, as from 1840 to 1845, and the imports about the same for a number of years preceding the Revolution that they are now! (See De Bow's Review, vol. ii., p. 374, 1846.)

A beautiful specimen of plumbago has been discovered in Virginia from a mine which appears inexhaustible. It is within

easy distance of Norfolk. A specimen has been sent to the World's Fair.

POPULATION OF VIRGINIA, 1790 TO 1850.

	Free Colored	Total Population	Slaves ^a
1790.....	..	746,308.....	293,427
1800.....	20,124.....	880,200.....	345,797
1810.....	30,570.....	970,622.....	392,518
1820.....	37,139.....	1,065,366.....	425,153
1830.....	47,348.....	1,211,405.....	469,757
1840.....	49,842.....	1,239,797.....	448,987
1850.....	53,757.....	1,429,044.....	475,972

BANKS IN VIRGINIA, 1851.*

Location	Name of Bank	President	Cashier	Capital
Alexandria.....	Exchange Bank of Va.....	Robert Jamison.....	John Hoof.....	107,000
Do.....	Farmers' Bank of Va.....	Phineas Jamney.....	Washington C. Page.....	300,000
Buchanan.....	Bank of Virginia.....	Charles T. Beele.....	J. Anthony.....	105,000
Charleston.....	Do.....	James C. MacFarland.....	Samuel Hannah.....	150,000
Charlestown.....	Bank of the Valley.....	Thomas Greggs.....	Cato Moore.....	190,000
Charlottesville.....	Farmers' Bank of Va.....	John R. Jones.....	William A. Bibb.....	104,000
Clarksville.....	Exchange do.....	Francis W. Venable.....	Augustus C. Finley.....	200,000
Danville.....	Bank of Va.....	Thomas P. Atkinson.....	C. B. Taliaferro.....	70,000
Do.....	Farmers' Bank of Va.....	Nathaniel T. Greene.....	George W. Johnson.....	120,000
Farmville.....	Do.....	William C. Flournoy.....	Archibald Vaughan.....	150,000
Fredericksburgh.....	Do.....	John H. Wallace.....	Arthur Goodwin.....	260,000

* Bankers' Magazine.

BANKS IN VIRGINIA, 1851—continued.

Location	Name of Bank	President	Cashier	Capital
Fredericksburgh.....	Bank of Virginia.....	Hugh Mercer.....	William K. Gordon...	290,000
Leesburgh.....	Bank of the Valley.....	John Janney.....	William A. Powell....	180,000
Lynchburgh.....	Bank of Virginia.....	C. Dabney.....	John M. Otey.....	300,000
Do.....	Farmers' Bank of Va.....	William Radford.....	Alexander Tompkins...	400,000
Morgantown.....	Merchants & Mechanics.....	Matthew Gay.....	William Wagner.....	75,000
Norfolk.....	Bank of Virginia.....	Aaron Milhado.....	Robert W. Bowden....	200,000
Do.....	Exchange Bank of Va.....	William W. Sharp.....	Wright Southgate....	501,000
Do.....	Farmers' Bank of Va.....	N. C. Whitehead.....	R. H. Chamberlain....	290,000
Parkersburgh.....	North Western Bank.....	James M. Stephenson...	Beverly Smith.....	100,000
Petersburgh.....	Bank of Virginia.....	Joseph Bragg.....	George W. Steinbach...	400,000
Do.....	Exchange Bank of Va.....	Thomas S. Gholson.....	Patrick Durkin.....	500,000
Do.....	Farmers' do. do.....	William Robertson.....	Pleasant C. Osborne...	270,000
Portsmouth.....	Bank of Va.....	John A. Chandler.....	William H. Wilson....	225,000
Richmond.....	Do. do.....	James Caskie.....	Samuel Marx.....	810,000
Do.....	Exchange Bank of Va.....	John C. Hobson.....	William P. Strother...	500,000
Do.....	Farmers' Bank of Va.....	William H. MacFarland...	John G. Blair.....	804,000
Romney.....	Bank of the Valley.....	David Gibson.....	John McDowell.....	200,000
Staunton.....	Do. do. do.....	James Crawford.....	Edwin M. Taylor.....	100,000
Wheeling.....	Merchants & Mechanics.....	John W. Gill.....	Sobieski Brady.....	461,500
Do.....	North Western Bank.....	John C. Campbell.....	Daniel Lamb.....	522,600
Wellsburgh.....	Do. do. do.....	Adam Kuhn.....	Samuel Jacob.....	118,000
Winchester.....	Bank of the Valley.....	Thomas Allen Tidball...	Henry M. Brent.....	430,000
Do.....	Farmers' Bank of Va.....	Robert L. Baker.....	Joseph H. Sherrard...	250,000
Wytheville.....	Do. do. do.....	Stephen McGavock.....	Thomas J. Morrison...	130,000

Total 35 banks..... Circulation \$7,000,000.. Specie \$2,300,000.. Capital \$9,713,000

There are in the State of Virginia twenty incorporated and private companies engaged in the manufacture of cotton, with an aggregate capital of \$1,800,000. When in full operation, these companies employ about 54,000 spindles, producing generally coarse yarns, and sold as such, or converted into shirtings, sheetings and Osnaburgs. There are ten woolen factories, running thirty sets of machinery, and having a capital of \$275,000

"It is a matter of not less mortification than astonishment, that Virginia, with an area of coal measures covering not less than 21,000 square miles, very much of which lies on or near navigable waters, and capable of yielding all the varieties of British coal, and of equal quality, should be reduced to the actual production of less than 200,000 tons of the value of \$650,000, while Great Britain, with little more than half the extent of coal measures, produces annually 37,000,000 tons, of about the value of \$37,000,000 at the mines, and \$180,000,000 at the markets of sale.

"And in regard to the iron trade, while Virginia has an unlimited supply of the finest ores, easily accessible for use and transportation, with the greatest abundance of coal, wood and limestone for their manufacture, yet under the operation of the present revenue laws of the country, her production, in spite of all the efforts of the state to encourage it, has shrunk to an almost inconsiderable amount, and is in danger of utter ruin.

"The imports of British iron during the last year were about 320,000 tons, requiring for its manufacture nearly 1,500,000 tons of coal, more than 1,000,000 tons of ore, and about 400,000 tons of limestone; all this, and more than all this, Virginia could easily

have furnished, and to that extent have developed her mineral wealth and encouraged her industry, and yet she has hitherto been content to leave Great Britain the profits of its production, although the duty paid by Virginia on the imported product would have been equal to 5 per cent.—ninety-five per cent. of the whole import being made north of Mason and Dixon's line, and there confined."*

VIRGINIA GOLD MINES.—Within the past three years several rich mines have been opened and worked successfully in different sections of the state.

The attention of the world has been awakened to the importance of this branch of mining. Since the discovery of the mineral wealth of California, thousands have flocked to that distant country, incurring great risks and deprivations in the hope of realizing their fortunes. A few have turned their attention to the same business nearer home, where success has generally attended their labors, while many of the sanguine wanderers who ventured their all are returning, after a year's absence, broken in health and spirits, no richer than when they left.

We believe Commodore Stockton was one of the first who introduced into Virginia effective machinery for reducing, on a large scale, the quartz rock, and demonstrating that a profitable business could be done in this branch of mining.

Some three years since he purchased the tract of land in Fluvanna county, about sixty miles distant from this city, upon which was a rich and extensive gold vein, where he erected a large mill and other works. The glow-

* Report of Manufacturers' Convention, 1851.

ing accounts received from California of the richness and extent of the *auriferous* quartz of that country, induced Commodore Stockton to suspend for a time his mining operations in this state, and to send his experienced workmen, with complete outfit, machinery, &c., to test the newly-discovered gold veins in California.

We are informed by a friend who conversed a short time since with one of the company, that they were not successful, the results not meeting expectations; their operations were discontinued in that country, the workmen returned to this state, and Commodore Stockton has resumed his mining operations in Fluvanna county on a larger scale than heretofore, having introduced improved machinery, and has good prospects of doing a profitable and permanent business.

There are several other gold mines in operation in this state, and are said to be doing well.

We have taken some pains to gain information on this subject, believing, as we do, that as the country becomes settled, and improved machinery introduced, *this branch of mining* in our state at no very distant day will produce an annual amount of the precious metal that will go far towards furnishing us with a *solid basis for our currency*.

The mines of William M. Moseley & Co. and the Garnett Mining Company in Buckingham county, are perhaps paying larger dividends to the stockholders on their outlay than any other mines in this state.

We have seen specimens of the quartz from this vein unequaled in richness by any auriferous quartz ever shown us. We were recently shown a large rock weighing 108 pounds, with the gold visible all through it, with many other specimens which were taken from the Garnett vein at ninety feet from the surface, at which depth the vein is from sixteen to twenty feet wide, all carrying gold.

There are several shafts sunk upon the vein, and galleries opened some six hundred feet in length, where the mills of these two companies are situated near together and on the same vein.

Six miles from these mines are two other mills worked by Mr. Eldridge and Mr. Wiseman, which are said to be doing very well.

VIRGINIA COMMERCIAL CONVENTION.—RESOURCES, INDUSTRY AND IMPROVEMENTS OF VIRGINIA—HER CONTEST FOR THE TRADE OF THE WEST, AND PROPOSED FOREIGN TRADE.—The committee appointed to report to the convention the most efficient means of achieving its important objects, have performed that duty, so far as the materials existed for a proper statistical exposition of the value of the trade of Virginia,

as well as the facilities completed, or in progress, for its transportation to the exporting cities of the state.

The commercial prosperity of Virginia is based upon the employment of the Chesapeake ports; and no project for acquiring the materials or the means of exportation, can be successful, which does not contemplate their employment.

The country tributary to the Chesapeake, possesses advantages not surpassed by any other on the Atlantic. Nature has been so bounteous, that the difficulty has been, not so much to discover a good site for a city, but to discriminate between the numerous excellent locations presented. Norfolk, Richmond, Petersburg, Fredericksburg, and Alexandria, have all been established to receive and conduct the trade of Virginia.

From the individuality of these local interests, it has been heretofore impossible to adopt any system of improvement calculated to promote the exclusive advantage of any one of the cities referred to. Apprehensive that the limited trade legitimate to each might be diverted to some rival, impediments have been thrown in the way of great lines of communication with the interior of our own and other states, calculated, perhaps, to vary the local direction of some particular trade, but destined, in the end, to compensate each of these cities, by its dividend of a trade far surpassing in magnitude and value any particular loss. The evils of rivalry will, however, be no longer felt, each of these cities having received a line of internal communication, many of which are now converging to a common point of union; interests heretofore supposed antagonistic are now harmonized in the completion of a plan common to them all, and weapons brightened by the conflict of a generous rivalry are now wielded in the achievement of a common triumph. It is thus that the construction of the Southside Rail-road, and the James River Canal, makes the prosecution of the Virginia and Tennessee Rail-road alike important to Lynchburg—to whose public spirit is so largely due the conception and execution of that great project—to Richmond and to Petersburg. The extension of the great central rail-road to the Ohio, no longer a subject of exclusive interest to Richmond, appeals to the support of Alexandria. The completion of the Dock connections will connect Norfolk with the James River and Kanawha Canal, and interest that city in its extension to the Ohio. The Richmond and Danville Rail-road is upon the same principle, a work from which Petersburg and Richmond may derive common benefits.

Convinced, therefore, that their interest and duty alike demand a cordial alliance, the cities of Virginia will hereafter bestow upon

the extension of the great lines of improvement here indicated, their earnest and combined co-operation.

Since, however, the partial completion of these great improvements have already bestowed upon the cities of Virginia a large accumulation of trade, it becomes necessary to encourage the establishment of a commercial marine, of sail-ships and steamers, to convey abroad our own trade, and exchange for it the productions of other nations. The export and import trade of Virginia is now taxed with transport coastwise for exportation from northern cities: it is burthened with the charges of northern merchants; whilst the whole commercial profits resulting from freights, exchanges, as well as from the importation and supply of the goods received on exchange, result exclusively to northern capital and to northern enterprise.

We state this fact in no spirit of sectional prejudice, but as a consequence of our own supineness. We think it time that a trade so circuitous, and a tribute so unworthy, should cease. We should now export from, and import into the Chesapeake cities of Virginia, by vessels owned and manned by Southern men. No state can expect to preserve its prosperity, which does not provide for its citizens the varied pursuits in which industry and enterprise shall receive an adequate reward.

In estimating the present value of the Chesapeake trade, so far as materials are at hand for a correct estimate, we will find that the James River and Kanawha Canal, its principal tributary, contributed during the last year \$6,123,865 49, the products of the interior; whilst it carried into the interior, merchandise and other articles, valued at \$7,727,224 29.*

The business of the central rail-road has doubled within the past year; its downward tonnage amounting to 25,000 tons, and its upward transportation is perhaps one-half that amount. The Richmond and Danville, the Richmond and Petersburg, and Richmond and Fredericksburg rail-roads, contribute considerable additions to the aggregate of trade upon the James River.

Amongst other important items of an export trade, we may mention that the total inspections of Virginia tobacco amount to 50,000 hogsheads, of which the larger portion is shipped to Europe; whilst the remainder, with a large amount not inspected, is manufactured in the interior for consumption at home and abroad.

The flouring mills in Richmond manufactured last year 1,173,100 bushels of wheat, and are expected this year to manufacture 1,587,100 bushels. This flour is shipped to Rio, through northern houses, in vessels whose return cargoes consist chiefly of coffee.

This coffee is, in turn, sent back in northern vessels to Virginia, for consumption—the freights, commissions, and commercial profits of both the export and import trade, being a direct loss to the State of Virginia, to which this trade rightfully belonged.

During the present year, however, some of the most enterprising merchants of Richmond have shipped nine cargoes of flour, directly to Rio, the vessels to return to this port with hides, coffee, and other products of South America. We are moreover informed that a larger amount of goods will be imported this year to Richmond than has been imported in any one year for a series of years; and that the direct import would have been far larger but for the want of ships in this trade, which compelled our merchants to ship through northern ports.

During the year ending July 1st, 1851, the foreign trade of James River gave employment to a number of foreign and American vessels. From a statement furnished from the Custom House, in Richmond, it will be seen that the tonnage employed in the direct foreign trade between Europe and the waters of the James River amounts to nearly 30,000 tons. This amount is itself amply sufficient to give employment to two steamers of 1,500 tons burthen.

If it were in our power to present the commercial statistics of the cities of Norfolk, derived from the Roanoke River, the Dismal Swamp Canal, and other sources; the rapidly increasing trade of Alexandria, derived from the Chesapeake and Ohio Canal, and from the country adjacent to her; of Petersburg and Fredericksburg; we do not doubt but that an amount of Chesapeake trade could be demonstrated adequate to sustain at once, by the energetic and united patronage of our merchants, a direct trade with Europe and South America. The materials for this trade already exist. Any doubt, however, which may be entertained of the present amount of Virginia commerce becomes unimportant, in view of the immense accessions to follow the completion of the improvements referred to. Whilst we pause to make the figures, the fact is upon us. A succinct statement of the works of artificial improvement now in progress and actually completed will serve to embody the facilities upon which we may rely, and to develop the capacity of transportation upon which the future trade of Virginia must principally depend. We think, therefore, it sufficiently appears that, looking alone at the present trade of our cities, we have ample encouragement to commence at once upon this undertaking, with the fair prospects of trade enough to ensure handsome profits to capitalists who may embark therein.

But when we glance upon the future trade

* An. Rep. of J. R. & K. Co., Nov., 1850.

which these cities must enjoy, we are still more encouraged. We will first inquire in regard to the number of miles of rail-roads and canals now constructed. Your committee have been furnished with the following very valuable statistics by the second auditor:

Statement of the Rail-roads in Virginia completed and in progress.

	Length	Completed
Baltimore and Ohio Rail-road.....	251.....	90
Richmond and Danville Rail-road.....	147.....	35
Richmond and Petersburg Rail-road.....	22.....	22
Clover Hill Rail-road.....	15.....	15
Southside ".....	122.....	10
Manassas Gap ".....	60.....	60
Petersburg and Roanoke Rail-road.....	60.....	60
Seaboard and ".....	77.....	77
Appomattox Rail-road.....	9.....	9
Winchester and Potomac Rail-road.....	32.....	32
Virginia Central Rail-road, including the		
Blue Ridge Rail-road.....	138.....	98
Virginia and Tennessee Rail-road.....	208.....	10
Orange and Alexandria Rail-road, including branch to Warrenton, ten miles.....	100.....	10
Richmond, Fredericksburg and Potomac Rail-road.....	76.....	76
Greensville and Roanoke Rail-road.....	21.....	21
Northwestern ".....	120.....	..
Miles.....	1,455.....	565
Chesapeake and Ohio Canal.....	185.....	185
James River and Kanawha Canal.....	200.....	200
Disston Swamp Canal.....	23.....	23
Fred's Valley Plank Road.....	40.....	1
Staunton to James River.....	40.....	..
Boynton to Petersburg.....	75.....	..
Junction Valley.....	65.....	..

It thus appears that there are now completed in Virginia 565 miles of rail-road, and 418 miles of canals; and that there are now in the course of construction 890 miles of rail-road, and 220 miles of plank roads. We have, then, the gratifying result, that there are nearly 2,000 miles of rail-roads and canals constructed, or in progress of construction, in our state. The appropriations or these works are already made, and the money has been almost entirely raised at home, without the necessity of incurring a foreign debt. The State of Pennsylvania, to make her improvements, has incurred a debt of near \$40,000,000, to pay the interest on which requires a semi-annual export of over a million of dollars, to be paid the foreign bondholders. On the other hand, our state debt is comparatively small, and owned chiefly at home by our citizens.

But this view becomes still more encouraging, when we recollect that these improvements will be finished at the farthest within the next four years. As each mile is finished, an increase will be given to the trade of our cities; and when the Virginia and Tennessee Rail-road, the Richmond and Danville Rail-road, and the Seaboard and Roanoke Rail-road are finished, they will be at once connected with a net-work of rail-roads through North Carolina, South Carolina and Georgia,

on the one hand—and Tennessee, Ohio, Kentucky, Alabama, Mississippi and Louisiana on the other. It is certainly a source of pride to know that we have quietly effected so much. Speculation would be at fault in estimating the trade that must follow the completion of these works. The rapid increase of our cities will be one certain effect, while the appreciation of real estate, and the profits of every industrial pursuit, will be increased. At the same time the heart of the patriot will rejoice that this acquisition of strength, wealth, population and power must result in restoring the South to her former position in the Union, and may render that Union, as bequeathed us by our forefathers, more stable and firm—its obligations everywhere observed, and everywhere sustained and beloved for the benefits conferred upon its citizens.

Georgia has now 1,000 miles of rail-road—South Carolina is extending her iron arms in every direction, and in two or three years every part of the state will be provided with rail-road facilities. North Carolina has giant schemes on foot, which she is prosecuting with a giant's strength. Tennessee will soon extend the Virginia rail-road, and the rail-road extending from Charleston and Savannah to Chattanooga, to Memphis, on the Mississippi. Alabama, Mississippi and Louisiana are seeking connections with these roads, and soon we shall see the South more highly improved by rail-road facilities than the North, owing to the level nature of the country and the cheapness of labor and materials in the South. Charleston alone is moving, with far-seeing sagacity for this increased trade. We feel pride and pleasure in her means, and we heartily hope she may prosper in her former enterprise to establish direct trade by means of ships and steamers owned by Southerners. We believe there is space enough, and a back country sufficiently ample, if we are true to ourselves, to secure the prosperity of all our southern towns; and their prosperity, so far from causing us to fall, will but add to our own prosperity. But how can the people of Virginia hope to contend with Charleston in the generous competition for this trade, unless equal facilities are provided in our harbors for shipping directly to Europe? If we pause in the contest, the trade will have been fixed in the direction of Charleston, and we may strive in vain to regain what is strictly our own.

To illustrate the advantages to be anticipated, we may refer to the enlightened and enterprising commonwealth of Massachusetts. The large expenditures made for the construction of rail-roads, and the results of that system, has there vindicated the wisdom which dictated it.

In that state the length of rail-roads in 1840 was 433 miles—it is now 1,033. The

value of property in the several counties of the state has increased from \$299,878,329 in 1840, to \$590,531,881 in 1850—an increase in the value of property during ten years, of \$290,653,552, or about one hundred per cent.

In Boston, which is the centre of the whole system of Massachusetts rail-roads, the following result is obtained:

	Population	Wealth
1840.....	171,002.....	\$120,111,574
1850.....	269,874.....	266,616,844

Showing an increase of 60 per cent. in population, and 140 in wealth.

Looking at the commercial returns of our own ports, the sea-ports of Virginia do not appear to have increased with that rapidity which the general prosperity of the state would indicate: indeed, our direct imports appear to have diminished. These unfavorable indications are, however, contradicted by the positive gain in the assessed value of real estate, and by the increased value of subjects of taxation within the state. The stagnation of our commerce is to be attributed to physical obstacles which separate the productive interior from our sea-board, whilst the enterprise of other states and cities has actually constructed improvements for the mere factorage of our produce, which we would not undertake for the positive increase of the fee simple value of the property, and the exclusive commerce of its enhanced products.

It is thus that towns in Western Virginia have sprung up, manufactures have been established, minerals have been made available, agricultural produce has been created, all of which seeks a market in the cities of Cincinnati, New-Orleans, Philadelphia and Baltimore; whilst even Savannah, in Georgia, has participated in those productions of Virginia, which could not have paid the cost of exportation eastward to the Chesapeake cities of Virginia. The cities enumerated have supplied the Valley and Western Virginia with merchandise in exchange for its productions. The commerce of Virginia, like some fountains choked up and neglected, cheers with its scattered streamlet every region except that to which its free and fertilizing current would naturally and gladly have directed itself.

We cannot make this valuable, though dispersed trade, the subject of exact estimate. It is reflected in the increased population and taxable resources of the state, so lately the subject of elaborate exposition in the constitutional convention.

We select, however, for illustration of its value, and of the obstacles which impede its exportation, the trade on the Monongahela. This river has been improved by lock and dam, so that steamers can ascend probably

within the limits of Virginia. Its trade will compare favorably with that of many rivers in Eastern Virginia; yet the natural line of exportation of its products, is by the Ohio and Mississippi rivers, the Gulf of Mexico, and east of the Atlantic, to the markets of the East, or to Europe. The aggregate line of water transportation from Clarksburg, in Harrison county, to New-York, is not less than 4,000 miles. The time employed is not less than ninety days; yet the direct line of transit to the Chesapeake, would not exceed 400 miles, whilst the time in reaching market might be reduced to a few days. Baltimore is providing a means of direct transit to accommodate this region of country, much of which has heretofore traded with Philadelphia; but after Baltimore shall have loaded her vessels with this product of Virginia, and supplied in return the merchandise for its consumption, she will be compelled to send it within the territory of Virginia for exportation to the outlet of the Chesapeake.

A similar difference between the natural and artificial communication of that part of Western Virginia bordering on the Ohio river, and of the valley of the Kanawha with the Atlantic cities, will be found to exist, whilst a small portion of southwestern Virginia sends produce to Alabama and Georgia, purchases groceries in New-Orleans, and imports its merchandise through Charleston, South Carolina. Let it be remembered, that this is a trade to be developed. The land is not a wilderness, requiring the life and labor of generations to reduce it to efficient production. The trade already exists; it has grown up under obstacles. It has been driven from its natural outlets, to enrich a distant and foreign interest in other states. But the fact of its development under such disadvantages, proves that it may readily be secured, whilst the anxious interest of the whole West proves the alacrity with which it would co-operate in the regeneration of the commercial interest of the Virginia cities.

There may be persons, however, incredulous that the trade of Virginia, now exported from northern, western and southern cities, can be directed to the ports of the Chesapeake. It will not be doubted that the greater portion of the products of the valley and Western Virginia are destined for consumption in the northern states, or in Europe. These products would adopt the most direct line of transit between production and consumption, but for the natural obstacles which intervene and condemn them to the tedious, tortuous and perilous navigation of the rivers and coast. The direct line of transit would pass through the Chesapeake ports of Eastern Virginia.

So long as the route of the water-borne produce of Western Virginia was cheaper

than any artificial line of direct transit, any attempt to divert that trade might have been hopeless. The opinion that no rail-road could succeed, unless it connected populous points, by a short line, has been reversed by experience. Considering the rail-road and locomotive almost as a revelation for the South, we may be pardoned for referring to the causes which are now producing through their agency such important, social, commercial, and political results. Time has become an essential element in the value of merchandise and staple productions. No producing region, and no mercantile community, can adopt a slow and circuitous delivery in competition with others producing or vending the same articles with greater facilities of transportation than themselves. Travel and postal communication now tolerate no delay or impediment. It is impossible to present any formula to show how far shortening the time of transit is equivalent to a positive reduction of freight. The telegraphic and express lines, everywhere well sustained, prove the estimated value of time to be very great; though it varies, of course, with the fear of competition, with the value of the commercial subjects, and with the relative importance of individual transactions. But we see from the opening of the artificial lines of Boston, New-York and Philadelphia, that the commercial patronage of the interior is immediately transferred to the most rapid and direct lines of outlet and intercommunication. It is thus that the great cities of the North have severally penetrated the interior with artificial lines, until they have taken from the open and untaxed current of the Mississippi the commerce produced upon its borders. These great artificial outlets have been competing among themselves for the commerce of the interior, until they now offer, not only superior certainty, and reduced time of delivery, but they offer upon many articles cheaper freights than the river and coast routes referred to. We copy from the New-Orleans Crescent a notice of the reversing of the natural current of trade, resulting from the construction of the great artificial lines referred to:

"For years past cotton has gone up the Ohio River from Tennessee, through the Pennsylvania and New-York canals, to all the factories in the interior of these states, and often the cities of Philadelphia and New-York. We recollect, last September, of one shipment of upwards of seven hundred bales, shipped from Louisville, via the Ohio and New-York canals to New-York city. The freights were less than by the way of New-Orleans, and the difference in exchange and insurance was near two per cent. in favor of the northern route.

"The amount of cotton that passed up the Ohio last year is estimated, by one familiar

with the trade, at sixty thousand bales. This season, nearly all the boats from the Tennessee and Cumberland rivers, bound up the Ohio River, are freighted more or less with cotton. The packets between Memphis and Louisville and Cincinnati, of which there are several lines, take cotton up the rivers nearly every trip.

"The quantity of tobacco that takes its course up the river from the Lower Ohio, for the eastern markets by northern routes, is rapidly increasing. That raised in Ohio and Kentucky, above Cincinnati—and among the latter, the celebrated Mason county tobacco—nearly all goes by the way of the canals to the eastern markets. By a statement recently published, the difference in the cost of transportation from Louisville to New-York is four to five dollars per hog-head in favor of the northern route, while the article escapes the sweat which it undergoes on shipboard while passing through our latitudes.

"Grain is now carried from the Wabash to New-York by the canals, at the same cost of freight as is charged by the way of New-Orleans; but by the northern route, they incur no waste, no risk of damage by heating, and save the whole cost of sacking, for it is carried in the bulk, and the same number of measured bushels are delivered in New-York as are received on board the canal-boat from the shipper. The lard, pork and flour from the same region are taking the same direction. Last autumn the rich regions of Ohio, Indiana and Illinois were flooded with the local bank-notes of the eastern states, advanced by the New-York houses on produce, to be shipped by them by the way of the canals in the spring.

"These moneyed facilities enable the packer, miller and speculator to hold on to their produce, with the opening of navigation in the spring; and they are no longer obliged, as formerly, to hurry off their shipments during the winter by the way of New-Orleans, in order to realize funds by drafts on their shipments. The banking facilities at the East are doing as much to draw trade from us as the canals and railways which eastern capital is constructing.

"All the lead from the Upper Mississippi now goes east by the way of Milwaukee. But the most recent and astonishing change in the course of the northwestern trade is to behold, as a friend tells us, the number of steamers that now descend the upper Mississippi, loaded to the guards with produce, as far as the mouth of the Illinois River, and then turn up that stream with their cargoes, to be shipped to New-York, via Chicago.

"The Illinois canal has not only swept the whole produce along the line of the Illinois River to the east, but it is drawing the products from the upper Mississippi through

the same channel; thus depriving not only New-Orleans, but St. Louis, of a rich portion of their former trade."

To this we may add the fact, that cargoes of corn have been recently shipped from Iowa, down the Mississippi, along the Illinois canal, by way of the lakes, to the city of New-York.

The cause of this astonishing result may be thus explained.

Artificial lines afford not only the most speedy means of transportation, but the unity and system of their administration gives them great advantage over the efforts of individual enterprise. They have a basis of travel and mail monopoly, which enables them to discriminate in favor of any specific article of commerce, the factorage and financial results of which may be sufficient to generally indemnify them for the abatement of freight, whilst the revenue of the improvement is sustained by an increased charge upon business not subject to competition, or by the large amount of trade which they command. These exclusive resources, rapidity, certainty and safety of transportation, with the power of discrimination, has enabled these great lines to wrest from the Mississippi so much of its produce.

To establish the capacity of artificial to compete with natural lines, we publish the following tabular statement, showing the contest between New-York and New-Orleans for the trade of the Mississippi:

New-York and New-Orleans in Western Trade.

	Population	Canal Trade
1840.....	2,429,721	66,303,892
1850.....	3,093,813	156,397,929

An increase of 25 per cent. in population, and 150 per cent. in trade, by canals, in ten years.

Produce of West received by New-York Canals.

1842.....	\$22,751,013
1850.....	55,474,937

An increase of 145 per cent.

Produce of West received at New-Orleans.

1842.....	\$13,716,045
1850.....	96,897,873

Or, an increase of 120 per cent.; or a comparative increase by New-York, of 25 per cent. over New-Orleans in Western produce in five years! In the three years, 1848, 1849 and 1850, the receipts at New-Orleans by river were 2,312,121 bbls. flour; at New-York, 8,636,207 bbls. Pork:—New-Orleans, 1,536,817; New-York, 211,018 bbls. Beef:—200,901 bbls., New-Orleans; New-York, 264,072 bbls. Wheat:—New-Orleans, 852,497 bushels; New-York, 8,798,759. Corn:—New-Orleans, 9,758,750 bushels; New-York, 11,178,228 bushels. Bacon:—New-Orleans, 135 millions pounds; New-York, 26 millions. Lard:—New-Orleans, 293 millions pounds; New-York, 21 millions.

Butter:—New-Orleans, eight millions pounds; New-York, 97 millions, &c., &c.

We have adverted to these well-established facts, and explained the rationale of their operations, to show that the trade of northern cities is derived by artificial ways from the great producing valley of the West. If this be the case—if productions prefer the lakes, railways and the canals of the north to the river and gulf outlet—why should not the products of Western Virginia, which almost circumnavigate their own state, which pursue a distant, indirect and unsafe line of transit, replete with every danger of river, cape and coast, prefer the direct communications *through* Virginia, and the more congenial destiny of encouraging our own ports? There is no reason. Their anxiety to complete these artificial outlets proves its practicability. All the vast aggregate of trade, now existing in Western Virginia, destined for Atlantic exportation, may be safely added to that which we have already demonstrated as subject to be employed in this great enterprise. We may safely say, that if all the existing commerce of Virginia, for exportation, could be collected in her own Atlantic ports, it would not fall short of twenty millions of dollars, nor would her consumption of merchandise be less. Besides this, the very organization of commercial facilities would guarantee an immense accession of mineral and agricultural productions.

In this connection, we must press upon all interested the indispensable importance of providing for the improvement of the James River, the common outlet of much of the Chesapeake trade. Its obstructions affect the trade of Norfolk, Richmond, Lynchburg and Kanawha; and each of them are alike interested in securing the perfect navigation of this noble stream. Your committee have not chosen to awaken controversy by designating any particular mode by which this shall be done; they are aware that if the interests now appealed to, shall be convinced of its paramount importance, the means will be readily devised for its accomplishment. The able and comprehensive report of Lieutenant Stansbury will prove the entire practicability of this work, and the moderate means to be employed in its completion.

We may properly add to these resources, which are directly derived from Virginia alone, the products of the states connected with her, by the lines of improvement now under construction. Tennessee, and Kentucky, and North Carolina, will naturally find their most direct outlet through the Virginia and Tennessee, the Southside and Seaboard rail-roads, now under continuous and connected construction to the interior of the state referred to. The prosecution of the Canal or Central rail-roads, or the

construction of a branch road into the Ohio Valley, will add much from those quarters ; and but a few years will elapse before the perfected facilities will bring this great commerce to the legitimate ports of exportation. We will not enlarge upon the commercial results of extending these lines into the interior of the southwestern states, and the national and international intercourse which will pour through Virginia, invigorating her local improvements, freighting her vessels, and filling her ocean steamers. It will be plain, upon investigation, that no cities south of Virginia have the commercial advantages of our own—none have the varied products, the local patronage, the rapid communication with transatlantic cities. Enterprise is now doing all it can to shorten the line of ocean transit. In this the cities of Virginia cannot compete with Boston or New-York for the transatlantic intercourse of the northwestern states ; but the mail and merchandise transportation, with the travel between the great southwest and the cities of Europe, belong legitimately to the Virginia ports of the Chesapeake, and will be certainly secured.

In embarking in this contest her citizens and commercial cities have a high duty to perform ; they must shake themselves of every sin of selfishness or of jealousy. They must co-operate with a rivalry of devotion to the common cause. There should be no greater jealousy between Richmond and Norfolk than between Philadelphia and New-York—yet, though separated from each other by a greater distance, the joint population of the two former cities is scarcely equal to a suburb of either of the two latter. There can be no incompatibility of interest in the harmony of these and other Virginia cities. Let them unite their patronage upon the great designs of internal improvement, and upon the organization of a foreign commerce, and their destinies are established.

Yet the competition will be intense. It will require energy, union and perseverance. The North has enterprise, capital, experience ; the South possesses the world staples of cotton, sugar, tobacco, with an immense mercantile consumption. The prize is worthy the efforts of the most gifted intellect, or the most matured experience. It is a strife to be fought with weapons congenial to the enlightened humanity of the present age. It is a contest fraught with consequences scarce inferior to those which hung upon our first great struggle. Virginia has the deepest veneration for the Union, a cordial admiration of those sister states with whom she contends for her heritage ; but she cannot break the bread of dependence, or sink into the position of an inferior to those who were her equals.

If the commerce to which we have adverted be not utterly fabulous—if its capacities

be not perverted by a mere introduction into our own cities—if the sons and brothers of those who subjected a wilderness to civilization, and gave an empire to freedom, who, braving a deadly climate and a desperate strife, planted the flag of Yorktown upon the Sierras of Mexico, be not utterly recreant to the instincts of their race, then must the glorious and peaceful triumph of commercial independence reward their patriotism and enterprise. The rewards of industry and of enterprise will be reserved to our own citizens, and the shameful tribute be abolished for ever.

The committee respectfully recommends the adoption of the following resolutions :

Resolved,—As the opinion of this committee, that lines of mail or other steamers, or other vessels, from Hampton Roads to some port or ports of Europe, ought to be established ; and Virginia, North Carolina, Tennessee, Kentucky, and such other southern states are as disposed to aid in the enterprise, should be appealed to ; and an appeal should also be made to Congress to bestow upon such line the same mail facilities which are extended to the northern lines ; and the bars which now obstruct the navigation of James River should be removed.

Resolved,—That committees be appointed to memorialize Congress and the legislature of Virginia, and to prepare an address to the public, upon the subject aforesaid, and the great importance to the people of Virginia, and the South generally, that they should conduct their own trade directly on their own bottoms, and with their own men and means.

Resolved,—That lines of packet-ships, screw-propellers, or mail steamers, ought to be established between the exporting cities of Virginia, and the West Indies, and South America.

Resolved, also,—That the people of Virginia be requested to hold meetings in their several counties, cities and towns, to effect the object of the foregoing resolution ; and that to this end it be recommended to them to adopt some organization by the appointment of standing and corresponding committees, or otherwise as to them shall seem best.

Resolved,—That the merchants of our Atlantic cities ought to import directly to our Virginia ports the productions of foreign countries used and consumed in this and the adjoining states ; and that it be recommended to the merchants of the interior, and the people at large, to aid them in this noble enterprise.

VINEYARDS OF THE SOUTH.—In one of the numbers of De Bow's Review, I noticed, with special attention, an estimate of the cost and profit of vineyards upon the

head of "Vineyards and Wines at the South." As you compliment me, first, in reference to articles published on vineyards in your "Review," I take the liberty of offering you a short communication in correction of some matters stated in that estimate, made from data had from the north and northwestern part of the Union.

In the Patent Office Reports of 1847, Mr. Longworth, the worthy and enterprising head of the vineyard cause in the northwest, contends against the positions of the American Institute, that the vine is an uncertain crop—good *one year in four* only; that the Isabella, the most noted grape of the North, is not worth cultivating in Ohio: that the Catawba, is of no account in many northern locations, etc.

As to profits, at least, the kind of grapes with the certainty of crops ought to come in for a large share of attention. As to both outlay and profit, the most famous southern grape, the Scuppernong (ripening too late for the North, and perhaps northwest) certainly ranks first. All southern vintners should mainly cultivate this grape. I have about two hundred varieties, including the Isabella, Catawba, Longworth's Ohio or Cigar-box, and all American grapes of any notoriety, but would not be without the Scuppernong for all the rest, even including Weller's Halifax, Norton's Virginia Seedling, Vine Arbor, Lenoir, &c. The Scuppernong and other kinds last named, never rot, if properly managed.

But, to proceed to a direct notice of the estimate in the number referred to of the Review, the first error I notice is, that two hundred dollars is too high for starting a southern vineyard. Not that the mere circumstance of the high cost of a vineyard presupposes little profit, for sometimes the greatest outlay is followed by the greatest profit. But a sound maxim, doubtless, is, that, in every outlay, the less cost the better. I have a warning myself, on that score, from specimen trees of northern *winter* apples at the South, and wretched bearers; and, also, from the failure of foreign, and some American, grapes on my premises. If depending on such for vineyard profits, mine would have been, I am confident, an entire failure in the vineyard enterprise. Take the past season to illustrate. Nearly all kinds of fruits, and even grapes in the woods, failed in this region, owing to a very late and severe frost. The leaves and formations for blossoms were killed or blasted in my vineyards; but new ones came out directly, and the result was a fine crop of grapes, especially of the Scuppernong. True, some Scuppernong vines failed to bear, as did others in this region; but I attribute the cause, in regard to mine, to the fact that I had not, as usual, in the fall preceding,

plowed or scarified the ground, etc. But my profits were more from the failure of fruits in general—for more than common resort was had to my vineyards by individuals paying entrance fees, &c. After entertaining visitors, frequently fifty a day, and selling quantities of grapes, mostly Scuppernong, I made upward of twenty casks of wine; though, apart from uncommon abstraction of grapes and peculiarity of season, I intended to make sixty barrels, according to my usual increase, years past, of ten barrels a year.

But, to proceed more formally in my calculation of outlay and profit, I will take the Scuppernong, as emphatically *the grape*, for all south of latitude 37° 30'. Twenty feet apart, each way, is the nearest this grape should ever stand in a vineyard, and at that distance, about one hundred vines are enough for an acre. This grape grows, not from cuttings, but from layers; and these layers are advanced to be well-rooted vines in the nursery, worth from twelve and a half to fifty cents, according to age and size. Any land that will grow good corn or cotton, is rich enough for grape culture; and there is more danger on account of having the ground too rich than too poor. Therefore, in most grounds South, there is no need of much, if any, cost for manure. For years, my most prolific vines were never manured—although the ground was scarified every fall, to prevent the fallen leaves from blowing away. Common rails or stakes are used, say for two or three years, or till the vines begin to bear well and to branch out sufficiently; then light wood or other posts take the place of stakes to support the scaffolding for the canopies. Where rocks abound, rock pillars, as in some parts of Europe, may support the canopies. I see, before my office, while writing, a Scuppernong vine, canopied as follows: four rock pillars supporting four skinned or barked oak poles, two thirty and two forty feet long, resting midway on the pillars and supported at the corners, where meeting, by oak posts set on flat rocks—and two poles, of the length of the four, thrown across midway, supported where they meet, in the middle of the area, by a post on a flat rock. Pine poles, twenty feet long and four or five feet apart, on which the branches of the noble Scuppernong vine repose and form a most beautiful canopy, emblematical, according to Scripture, of liberty and peace, under which one may sit without fear. I here remark, that, if vines were anciently trained trellis or stake fashion only, the Bible expression would be, "every man sitting" *beside*, not "under, his own vine."

As my ten acres of vineyard was gradually formed by turning hands from plantation, business, &c., I cannot estimate, accurately, the cost of any one acre, or its

profits. But I will set down cost and profits, as I suppose past experience will warrant me to state, for an acre of Scuppernong vineyard, should I now undertake to set out one, with the prices of materials and labor. Of course, prices vary in different parts of our country, particularly near large towns and cities

Farming Vineyards at the South, per acre.
—Without manuring, any land rich enough for good corn or cotton, will do for vineyard culture.

Plowing and harrowing, say	\$ 1,00
But if land needs manuring (say plowed in and putting manure in holes) before planting	20,00
Distance twenty feet each way, as near as admissible for Scuppernong vines. About 100 well-rooted vines, at 25 cents each.	25,00
For stakes to stand two years, of oak or light wood, or pine rails, ten or eleven feet long, and set in two feet deep, north side of holes dug for planting the vines—100 at 5 cents each.	5,00
Digging holes two feet wide and two feet deep, 100 at 5 cts each.	5,00
(Plowing twenty feet each way will help the digging at the intersections.)	
Putting in the stakes and filling holes nearly full of manure, if necessary, and rich surface earth above the manure, if manure is used; and, after wetting thoroughly with soft water, planting vines thereon in the centre of the holes, and tying the vine-stem or stems to the stake, say with elm bark or other lasting ties	5,00
	\$61,00

The ground between the vines, for two years, may be planted with Irish potatoes, bush beans, or any plant that will not shade or interfere with the vines; and such vegetables, manured in the drill and worked at the same time with the vines, kept hoed clean and trimmed, will tend to increase the fertility for the vine roots as they spread. The product of the crop thus had, will, perhaps, pay the expense, or more, of working the ground the two years. The third year, if properly managed, crops of grapes begin, and the frame, at least, for the scaffolding and canopies may be made as follows:

100 light wood, cedar or oak posts, ten, eleven or twelve feet long, and six, seven, eight or more inches in diameter, worth, say 20 cts. each	\$30,00
Digging the 100 holes, two and a half feet deep, at 2 cts. each	2,00
Nailing two cleats or shingles on each side of the squared top of every post, the ends of which cleats project upward, to hold on the scantling or larger poles, say 2 cts. cost thereof, for each post	2,00
Setting the posts in the ground	1,00
About 200 larger poles of oak or pine, with the bark taken off, twenty feet long, and four, five or six inches in diameter, worth, say 10 cts. each	20,00
About 400 smaller poles, with the bark taken off, twenty feet long, and three, four or five inches in diameter, (pine will last as long as oak generally,) at 5 cts each	20,00

Putting up the poles and spreading the vine branches thereon, worth, say	10,00
	\$75,00
So the cost of commencing an acre of Scuppernong vineyard, I calculate only	\$61,00
And for scaffolding, the third year	75,00
	\$136,000

And in six years, with right usage, the vineyard may bear half a crop, in ten or twelve years, a whole crop, or two thousand gallons of juice, or six hundred bushels of grapes and upward—and so on for one hundred years more—as experiments have shown the Scuppernong to be the most lasting of all vines. The proportions of cost for other sorts of vines may be easily calculated. My distance each way for others, is ten feet; and, at that distance, an acre quadruples in number the Scuppernong: or, about—

400 vines at 25 cts. each	\$100,00
400 stakes at 5 cts. each	20,00
Digging 400 holes at 5 cts. each	20,00
Expense of putting in the stakes and planting the vines, say	10,00
	\$150,00

And, for scaffolding and canopies, the same materials and process of using them may be had as for the Scuppernong—except the stakes may be retained, or others put at middle distances of ten feet, to support, by tying, the main stems of the vines intermediate vines, without stakes, can be tied to the poles above them, as to main stems, and their branches thus spread over the scaffolding. But if new stakes are used at intermediate distances for the vines between the posts, about three hundred are necessary; and they would be an additional expense of scaffolding to that of the Scuppernong of fifteen dollars. But if vines are tied to the poles above, at the medium distance of ten feet, less expense, of course, is incurred than in the stakes and tying. Thus, then, the

Expense of scaffolding (three years)	\$75,00
Putting out the acre, as above	150,00
Additional cost of stakes	15,00
	\$240,00

The cost of the Scuppernong vineyard is \$136 00: this, subtracted from \$240 00, the cost of other kinds, leaves, in favor of the Scuppernong, \$104 00. So, the estimate of \$200 00 for farming a vineyard, as made in the number of the Review adverted to, is \$139 00 more than that required for the Scuppernong vineyard.

All the comparative estimates tend to prove greatly in favor of southern vineyards, on the "American system" of scaffolding, in regard to moderate cost. The southern having vastly the advantage, we may add, as to certainty of yield and profits.—*Sidney Weller.*

N. B.—The foregoing estimate, as to number of vines, stakes, posts and poles, is, *fractionally*, not correct, but will be found *substantially* right. One hundred, as a basis, is more convenient for calculation; and entire exactness could not be had without troublesome fractions. As to skinned or barked round timbers, instead of split, that mode of fixture, for canopies, is adopted by me as least expensive, more durable, and the best every way. The greater part of my vineyards, as to scaffolding and canopies, have split posts every ten feet each way, and split scantling and rails thereon, eleven and twelve feet long, or longer than ten feet, in order to lap each way.

VINEYARDS AT THE SOUTH.—MANUFACTURE OF WINES.—For upwards of twenty years, the writer has experimented in the vineyard business, and in making the best American wines, or wines accounted by the best judges, and by his patrons in various parts of the Union, better than European.

His vineyard of ten acres, and vineyard products (fifty and sixty barrels annually), are the largest now in the South, and are rapidly on the increase. His wines, according to quality, and cost, and trouble of making, command in market from one to six dollars per gallon, with twenty per cent. off by the cask; and at the same rate per bottle also, after adding cost of bottles, sealing, wiring and labeling. Here the writer appends what he deems the most important hints to all American vintners; and states that, with the exception of a few gallons of wine occasionally made with shriveled or over-mature grapes, by way of experiment, and no ingredient whatever added to the juice (experiment convinces him that in the *South*, at least, it is utterly impracticable thus to make wine as a profitable or desirable business), he makes some of his best kinds of wines, as Madeira, Port, &c., by adding plenty of spirits, or sugar, or both, according to the wines intended as the result. For instance, as a third of spirits is put into the juice for making the best Eastern wines (medicinally and otherwise), ere reaching our shores, so for some of his, is added a like quantity of spirits, as advised by Mr. Longworth, our greatest Western vintner, in his Patent-Office letter of 1847. True it is, according to recent statements, that some wines are made in the western vineyards, under Mr. Longworth's auspices, without any safe-keeping, enriching ingredients whatever added to the juice of the grape. But it is also true, by accompanying accounts, that such wines, like those made thus in France and other eastern vineyards, are of a lower price, indicating, so far as that is concerned, an inferior quality, or, as we have reason to believe, more body and zest by said artificial ingredients being added, a higher price is commanded, when the mer-

its are known, as for Madeira and Port. For instance, while the best Malaga sells at a dollar a gallon in this country, the best Madeira and Port, of one-third spirits, or of the strongest body, by artificial help, sell for several dollars per gallon. Why do not, then, American vintners, and especially southern ones, take this fact as a most significant hint for their operations in their wine-making business? But it is alleged by some, that wines made by artificial help to the grape-juice are therefore less pure. And pray, what more pure things are there in physical nature than sugar and spirits, or say, saccharine and alcoholic principles? These principles enter into almost all vegetable creation, as the pure, grand preservative ingredients. For instance, every grain of corn or wheat has more or less alcohol therein for its pure preservative, as developed by distillation. And since two of the chief constituent principles of all wine (the definition of wine, the world over, being the "fermented juice of the grape," and therefore always alcoholic by fermentation, and as such, capable of intoxicating effect, if intemperately used or abused, as set forth in the Bible), are saccharine and alcoholic, is it not chemically absurd to allege that the same ingredients, increased artificially, to add body, safe-keeping and strength, render the wine thus made impure? As if more of the purest ingredients of wine added artificially made any wine more impure! or, as if mere additions of constituent pure things, added to any things necessarily, or in any way, change the nature of such things for the *worse*! and as if adding spirits to foreign wines, so far from making them worse, made them better, medicinally and otherwise, and adding the same ingredient to American wines, made them worse!

Let the candid, with these suggestions before them, judge impartially for themselves, and not be imposed on by the absurd position of interested salesmen and others, as to foreign wines, in order to ruin or greatly injure the vineyard business, in the South at least of our country.

For it is a fact, and tested as such by long experience of others, as well as the writer, that the Scuppernong grape, which outyields any grape in the world, as to fruit and juice (as one vine covering a quarter acre yields five barrels of wine annually), is so deficient in *quantity* (I say *quantity*, for the *quality* is most excellent), of saccharine and alcoholic principles, that without artificial help, by some ingredients, the wine will not keep, or be of any superior quality ere spoiling; and there is no help for this difficulty, to any practical purpose, by suffering the grapes to become extra ripe, or shriveled on the vines: for whenever ripe, most of the berries fall off by the first wind or storm of any violence; and so deficient is the juice of the quantity, of necessary wine ingredients, at the common ripeness of the grapes, that the juice is com-

paratively *insipid*, as tried by hundreds of the writer's guests tasting it, as running from the presses in vintage seasons. But by adding a sufficiency of double-refined loaf sugar, as an ingredient most congenial to its own exquisite taste in quality, it makes a *most delightful beverage*. And strange as the fact may appear to some mere theorists, the very Scuppernong grapes of the same degree of ripeness as those affording the comparatively weak or deficient quantity and quality for beverage or wine, are the *most delightful fruit*, and are preferred by a vast majority of the writer's guests or visitors in vintage time, to any of about two hundred other kinds in his vineyard, including the Catawba, Isabella, and other most favorite natives in our country, both North and South.

I am most credibly informed that a Spaniard, of reputation as a European vintner, experimented pretty largely on Scuppernong Island (originating the name of this grape), as to the qualities of the Scuppernong grape for wine, and that he pronounced it unfit or deficient in quantity and quality of juice to make wine without artificial help; or rather, I would say, in his *ignorance and prejudice*, he *condemned* the grape for wine-making. He as inconsistently pronounced such condemnation, as if he had for like reasons condemned the grapes of the *Madeira Island*, or those of Oporto, because one-third of spirits was necessary to develop those grapes into their most excellent wine qualities.

As to spirits for the safe keeping and duly enriching ingredients to Scuppernong juice, from ample experience and most reliable information, I consider a fourth the *least safe* quantity, or one gallon to three of juice; and as to sugar, two pounds per gallon of juice, though a third of spirits and three pounds of sugar is safer and better every way.

Some years since, traveling through Franklin county, North Carolina, I called at a celebrated Scuppernong vineyard, and found by tasting and information, that of about seventeen barrels of Scuppernong wine made the past vintage, every one of them had a taste slightly acid. And on inquiring, I found that, owing to a deficiency of brandy on hand, one-fifth only had been added in making the wine. True, in such cases the wine may be recovered by adding more brandy, or some sugar, or both. But it is also true that the wine is not quite as good in such cases, as if the requisite or safe quantity had been added at first.

Some ten years since, I was written to from Columbia, South Carolina, by a Frenchman, that if I had any partly spoiled or acid wine, he would come and change it to good for a proper compensation. I declined the proffer, having no confidence in the foreigner.

Months after, I learned from a most respectable gentleman from the place, that the *bad wine* the Frenchman made apparently

good, had changed to become worse than before, in a few weeks. I concluded some impure or deleterious ingredient of an evanescent effect had been used. I concluded, also, I could beat the Frenchman by making a permanent change through pure ingredients added; and into some wine then on hand, I put sugar and spirits, as much as needed to recover it, and the result was even beyond expectation. It has been alleged (from a source, however, of no reliance) that grapes in the far South more abound in saccharine and alcoholic properties, and therefore the juice less needs artificial help to make wine. But even if that is a fact, another fact is, that the further south the warmer the weather is in vintage time, saying nothing of the less chance of deep cellars to help to prevent the wine running into the acetous fermentation. In the North, or Ohio, not only the Catawba will stick on the cluster till fully or extra ripe, but colder weather, and the advantage of deep cellars are enjoyed. But I opine, no matter how cold the climate, or how deep the cellars, that the Scuppernong juice, if enjoying these advantages, would not keep without *artificial* help.

Herbemont's Madeira grapes, in Columbia, South Carolina, hang on the vines, if escaping the rot, as long as desired after being ripe; but with one pound of sugar per gallon, more than half the wine is apt to spoil by souring (or, as I aver, by deficiency of safe-keeping ingredients), as set forth from Mr. Guinard, in Mr. Longworth's Patent-Office letter of 1847. Now, I fearlessly assert, that from my experience with this very grape in wine-making, *three* pounds of sugar, instead of *one*, put into its juice, or *one-third* spirits, and the same pains being taken as by Mr. Guinard, would make a very good, and far better wine than that made with the use of the *meagre one pound* of sugar per gallon. And when it is remembered that the spirit adds its own bulk, and the sugar half thereof, to the quantity or volume of the wine, the argument is greatly enforced against *stinginess* of safe-keeping enriching ingredients in making Scuppernong wine. And I may say the same of the making of American wine from any kind of grape.

Wishing to gain the best intelligence in our country on wine-making, besides reading the treatises extant thereon, I have received, by solicitation and otherwise, numerous receipts from the lower part of our state, for making the best Scuppernong wine. And it is remarkable, that not one correspondent from the region and origin of this most famous American grape, gives any process for making this wine without either sugar or spirits added, though most of them differ as to the quantity necessary, of either, or both, to make and safely keep the wine. But as to the most exquisite taste of the Scuppernong

wine, double-refined sugar, doubtless, is best to secure that, because coming nearest to the most delightful taste of the Scuppernong grape.

The highest praise of any wine is, that its zest is like that of the grapes of which it is made.

A most eminent vintner from Germany first suggested the double-refined sugar for making the most excellent Scuppernong wine. And as soon as I tried it, I found he was right, or chemically correct.

I must here relate a fact, at the danger of appearing vain to some, viz.: I was written to, from the lower part of our state, to come down (about eighty miles), and instruct how to make the highly reputed, best Scuppernong wines, and was offered \$4 a day from starting to returning. And I here append the result of my mission, as follows, viz.:

The mashing machine, woolen blankets to strain with, and sugars and spirits being all ready, as directed by letter, I made, as samples, a barrel of each of the following kinds of Scuppernong wine, or cordial, viz.:

1. Scuppernong (proper, or no appellative name), at \$1 per gallon, made with one-third brandy.

2. Scuppernong champagne, at \$2 per gallon, made with one-fourth brandy, and one pound of double-refined sugar per gallon.

3. Scuppernong Madeira, (a white or colorless wine,) at \$3 per gallon, made with three pounds per gallon of double-refined sugar.

4. Scuppernong hock (of a beautiful red color, by fermenting one bushel of purple Scuppernong with seven of the white,) at \$4 per gallon, made with three pounds of double-refined sugar per gallon, and peculiar pains in racking, &c.

5. Scuppernong perfect love cordial, \$10 per gallon, made with one-third brandy and two pounds of double-refined sugar per gallon.

I append here, a kind which I make at my premises, and not convenient to make there, because of the very short time I had to stay on account of the need of my presence at my own vintage, viz.:

6. Purest Scuppernong, \$6 per gallon. One variety of this kind is made with a third of Scuppernong brandy, and another with Scuppernong syrup.

The brandy is from distillation of Scuppernong juice soured. And the syrup is from the sweet juice reduced by boiling. Twenty per cent. or more off the price per gallon when sold by barrel or cask. A most respectable lawyer, Joseph S. Cannon, Esq., of Hertford, Perquimans county, wrote to me, and I operated in wine-making with his brother, Mr. James J. Cannon, upper part of Chowan county, near the river of that name. (Post-Office, "Ballard's Bridge.") I add here, that

Mr. Cannon bought in most of his grapes, or about one hundred bushels, ere I left, and expected one hundred more, engaged to complete his vintage.

A number of small Scuppernong vineyards are scattered through different regions of the lower part of North Carolina. The owners sell a part of their grapes, and a part they convert into wine. Cartloads of grapes, I learn, were carried from Mr. Cannon's neighborhood to Norfolk, (60 miles distant,) and some, bought there, were shipped to Baltimore, and elsewhere. So great is the quantity sold at Norfolk, from the adjoining country, that often there are 30 cartloads a day there, I was told, in vintage time. So much appreciated is this grape for table fruit, preserving and kindred purposes, that all taken found a ready market. I sell quantities sent for to my vineyard, from various distances, at 50 cents to 30 cents per gallon, according to time of the vintage, or pains in gathering and quantity taken at a time; but the price at Norfolk, I learned, was much lower—or sometimes two dollars a bushel. And so esteemed are the Scuppernong grapes here, that for the time of ripening, or about two months, the berries ripening in succession, most guests pay an entrance fee into the vineyard of a quarter of a dollar each, and on pic-nic days, sometimes a hundred at a time, prefer this to all other grapes. A gentleman near Warrenton, 20 miles west, from a small Scuppernong vineyard, made clear, last vintage, a hundred dollars, by selling grapes in that town. Seeing, then, the superior excellence of this grape in every way, (except in *quantity*, not *quality*, of *saccharine* and *alcoholic properties*,) it is no marvel that its culture is rapidly extending over all the South,—hundreds of the rooted vines annually sell at from 20 to 25 dollars per hundred. I distribute them to distant places South, from my nursery, and good Scuppernong wine is increasing in reputation and circulation every year. And as to Southern and Western vineyards: "*Ephraim* need not envy *Judah*, nor *Judah*, *Ephraim*." But let all work on harmoniously, to free our country from so many annual millions of foreign dependence for wines, not so good as may be made in our midst by intelligence and skill. Throughout the *South*, by putting one-third spirits to any sort of grape-juice, (but especially the *Scuppernong*, according to Mr. Longworth's advice,) an excellent wine may be made, worth a dollar a gallon. And, in the West, or North, by the same help, or even without any artificial aid to the juice, in some cases, or with some kinds of grapes, a wine may be made of equal excellence and value. And as to any wines superior, or of higher price, because of more cost and trouble, why that is the matter of taste and choice.—*Sidney Weller*.

VINEYARDS AND WINES.—It is known to many of our readers that Cincinnati and its vicinity have acquired great fame for the production of the finer wines; and the following, by Mr. Buchanan, a leading merchant of that city, will be read every where with interest:

Selecting and Preparing the Ground.—A hill side, with a southern aspect, is preferred. If the declivity is gentle, it can be drained by sodded, concave avenues; but if too steep for that, it must be benched or terraced, which is more expensive.

In the autumn and winter, dig or trench the ground with a spade all over, two feet deep, turning the surface under. The ground will be mellowed by the frosts of winter.

Planting.—Lay off the ground in rows three by six feet; put down a stick, twelve or fifteen inches long, where each vine is to grow.

The avenues should be ten feet wide, dividing the vineyard into squares of one hundred and twenty feet. Plant at each stick two cuttings, separated five or eight inches at the bottom of the hole, but joined at the top—throw a spadeful of rich vegetable mold into each hole, and let the top eye of the cutting be even with the surface of the ground, and if the matter is dry, cover with half an inch of light earth.

The cuttings should be prepared for planting, by burying them in the earth immediately after pruned from the vines, in the spring; and, by the latter end of March, or early in April, which is the right time for planting, the buds will be swelled so as to make them strike root with great certainty. Cut off close to the joint at the lower end, and about an inch in all above the upper.

Pruning.—The first year after planting, cut the vines down to a single eye (some leave two;) the second, leave two or three; and the third, three or four. After the first year, a stake six and a half or seven feet long must be driven firmly down by each plant, to which the vines must be kept neatly tied, with willow or straw, as they grow. Late in February or early in March is the right time for spring pruning in this climate.

Summer pruning consists in breaking off the lateral sprouts and shoots, so as to leave two strong and thrifty canes or vines—one of which is to bear fruit the ensuing season, and the other to be cut down in spring pruning, to a spur, to produce new shoots. These may be left to run to the top of the stake, and trained from one to the other, until the wood is matured, say in August or September, when the green ends may be broken off. One of these vines is selected next spring for bearing fruit, and cut down to four or six joints, and bent over and fastened to a stake, in the form of a bow. The other is cut away as well as the fruit-bearing wood of the last year, leaving spurs to throw out new wood

for the next, and thus keeping the vine down to within one and a half or two feet of the ground. Nip off the ends of the fruit-bearing branches two or three joints beyond the bunches of grapes, but do not take off any leaves.

If both the cuttings grow, take one up or cut it off under ground, as but one vine should be left to each stake.

Culture.—The vineyard must be kept perfectly clean from weeds and grass, and hoed two or three times during the season. Keep the grass, in the avenues around, down close. About every third year put in manure by a trench the width of a spade, and three or four inches deep, just above and near each row; fill in with two or three inches of manure and cover up with earth.

Wine Making.—Gather the grapes when very ripe; pick off the unsound and unripe berries. The bunches are then mashed in a mashing tub, or pressed through a small mill, breaking the skin but not the seed, and thrown into the press, and the screw applied until the skins are pressed dry.

Fermentation.—This process is very simple. The juice is put into clean casks, in a cool cellar, and the casks filled within about four or five inches of the bung, and the bung put on loosely. The gas escapes, but the wine does not run over. In from two to four weeks, generally, the fermentation ceases, and the wine clears; then fill up the casks and tighten the bungs. In February or March, rack off into clean casks. In the spring, a moderate fermentation will again take place; after that, the wine fines itself, and is ready for bottling or barreling. Use no brandy or sugar, if the grapes are sound and well ripened. Keep bunged up or corked tight, and in a cool cellar, and the wine will improve, by age, for many years.

Statistics.—Cost of my vineyard, of six acres—fourteen thousand four hundred vines:

Trenching, two feet deep, \$65 per acre.....	\$390
Sodding avenues.....	60
Cost of 30,000 cuttings, at \$2 50 per thousand.....	75
Planting.....	70
14,500 locust stakes, at \$3 per hundred.....	435
Setting 14,500 stakes.....	55
Total.....	\$1,085
Cost of attending the first year—vine-dresser \$216, and a hand for one month.....	\$231
Second year—vine-dresser \$216, and a hand for two months, at \$15 per month.....	246
Cuttings, after first year, to replace failures, say.....	20
Hauling, carting, &c.....	65
Contingencies, &c.....	160
Average cost, say \$300 per acre.....	\$1,800

The third year the vines will produce grapes enough to pay the expenses of that year—generally more.

For the fourth year, and a series of eight or ten years in succession, the experience of the past would indicate the following calculation to be something like a fair one :

Say six acres average 250 gallons, at rates heretofore, \$1 per gallon.....	\$1,500
Deduct cost of vine-dresser, per annum.....	\$240
Assistance, hoeing, &c.....	60
Gathering grapes and pressing.....	150
	450
Net profit per annum.....	\$1,900

To attain this, the vineyard must be favorably situated and well attended, by a competent vine-dresser, and free from the disastrous visitation of the rot.

Vine Culture in this Vicinity.—It is estimated that over three hundred acres are now planted with the vine, within a circuit twelve miles round Cincinnati; nearly two-thirds of which were in bearing last year, producing, notwithstanding the rot, so injurious to many, about 50,000 or 60,000 gallons of wine.

The Catawba is our *great* wine grape, and principally cultivated. The Isabella is not preferable for wine, and is only used for table use.

Mr. Longworth, with unwearied zeal and liberality, is still experimenting with new varieties, and may yet find a rival for the Catawba.

N. B. Some vineyards, in good seasons, have produced at the rate of 600 to 800 gallons to the acre; but this is rare. The usual yield is 300 to 400 gallons, where there is but little rot. A bushel of grapes, if well ripened will produce three and a half to four gallons of wine.

By proper economy, a man may have a vineyard of several acres, in a few years, without feeling the expense to be burthensome. Commence by trenching one acre in the winter, and planting it out in the spring; next year another acre, and so on for five or six years. After the first year, he will have his own cuttings, from the first acre, and also grapes enough to pay for the cost of planting the succeeding additions to his vineyard.

If he has suitable timber on his own land, the stakes can be got out in the winter with but little outlay in money. By this course, the cost of a vineyard of six acres, would not be half as much as mine.

Some prefer planting in rows, four by five—others, four and a half by four and a half; and on level land, three and a half by six, or even seven feet.

I have merely given, in the foregoing remarks, the course pursued by myself and some of my neighbors, without pretending that it is preferable to others.

WESTERN VALLEY—PROGRESS OF THE GREAT WEST IN POPULATION, AGRICULTURE, ARTS AND COMMERCE.

"Thou movest,
Like climbing some great Alp, which still doth rise—
Vastness which grows." CHILDE HAROLD.

The immense regions of the American Union, westward of the Apalachian Mountains, drained by the waters of the Gulfs of Mexico and California and the remote Oregon, swell upon the imagination in majesty and grandeur, contemplated in whatever light. In this semi-hemisphere exists every conceivable element of densest population, progress, enterprise, wealth, and highest civilization. Climates genial—soils prolific in all growths and without degree—rivers like inland oceans, for navigation and trade—minerals and forests unlimited. Westward is the tide of progress, and it is rolling onward like the triumphant Roman chariot, bearing the eagle of the republic or the empire, victorious ever in its steady but bloodless advances.

Four great valleys have their mountain ranges and divisions in this vast whole, which we have had the temerity to contemplate at a single view, as the heritage which our fathers left to us and our children, and which we, so far from squandering, have wisely administered and enlarged—the *Valley of the Rio Grande*—the *Valley of the Colorado of the West*—the *Valley of the Oregon*—the *Valley of the Mississippi*.

Of course it would be impossible in the limits of a magazine like ours, to notice in detail the striking features and interesting characteristics of each of these regions. We must confine ourselves, for the present, to one of them, which, indeed, presents material for volumes, and which at this day is most interesting, because most in progress—the *MISSISSIPPI VALLEY*. We shall, however, refer to each of the others casually.

The Valley of the Rio Grande.—After the question of boundary had been settled at the close of our war with Mexico, the Rio Grande, insisted upon as an ultimatum by our government, became to us an important region. It already contains several considerable towns, and the Island of Brazos, near the mouth, has been selected by the United States for the erection of hospitals and other public buildings, store-houses, &c. Point Isabel, on the main land at the mouth, has already classic interest, and must, from its admirable position, be the seat of an important commercial town. We are not exactly informed as to the draught of water, but know that its approaches are safe and accessible. It is a much more favorable site, we should think, than Brazos, the latter being liable to overflow, as in 1844, during the hurricane months, by the rise of the river, with great destruction of property. The Mexicans, aware of this danger, were indisposed to improvements at Brazos. Point Isabel is entirely safe from all this.

An able writer in the Houston Telegraph thus speaks of the Rio Grande Valley, from personal knowledge:

"We are confident that in a very short period of time, the Egyptian cotton will be cultivated here to as great or even greater extent than in the valley of the Nile. The few experiments that have been made in the culture of cotton in the vicinity of Matamoras, have been remarkably successful. The cotton-plant grows in this region with wonderful luxuriance, and yields an abundant crop almost without culture. The sugar-cane also grows here to an enormous size, and far exceeds in its products the cane of Louisiana or any portion of Eastern Texas. The climate is so mild in the vicinity of Matamoras, and as high up as Camargo, that the cane is seldom touched by the frost until it has attained a size nearly equal to that it attains within the tropics. The frosts, too, are generally so light, that they mature the cane at an earlier period than it would mature within the tropics; while at the same time the product of sugar is rather increased than diminished. It has been remarked by naturalists that tropical plants are more productive without the limits of the tropics, and near the northern limits of their growth, than they are near the equator. If this doctrine is correct, the culture of the sugar-cane will be found more productive in the lower portion of the valley of the Rio Grande than it is even in Cuba. Many valuable tropical fruits may also be cultivated in this section with great advantage. The orange, fig, pomegranate, and similar fruits, grow with wonderful luxuriance in the vicinity of Matamoras and Camargo. The portion of country extending from Point Isabel to Laredo, will, probably, at no distant day, be covered with extensive plantations of sugar-cane, Egyptian cotton, and groves of oranges, lemons, figs, olives, and other tropical fruits, and rival in beauty and loveliness the fabled gardens of the Hesperides."

The Valley of the Gila forms a part of this region. The Washington Union describes it from the settlement of El Paso:

"The settlement of El Paso extends from the falls of the Rio Grande on the north, to the Presidio on the south—a distance of twenty-two miles—and is one continuous orchard and vineyard, embracing in its ample area an industrious and peaceable population of at least eight thousand. This spacious valley is about midway between Santa Fe and Chihuahua, and is isolated from all other Mexican settlements by the mountains that rise on the east and west, and close into the river on the north and south. The breadth of the valley is about ten miles. The falls of the river are two miles north of the 'Plaza Publica,' or public square, and afford sufficient

water-power for grist and saw-mills, enough to supply the entire settlement with flour and lumber. The most important productions of the valley is the grape, from which are annually manufactured not less than two hundred thousand gallons of perhaps the richest and best wine in the world. This wine is worth two dollars per gallon, and constitutes the principal revenue of the city. The El Paso wines are superior in richness and flavor and pleasantness of taste to anything of the kind I ever met with in the United States, and I doubt not that they are far superior to the best wines ever produced in the valley of the Rhine, or on the sunny hills of France. Also, great quantities of the grape of this valley are dried in clusters and preserved for use during the winter; in this state I regard them far superior to the best raisins that are imported into the United States. Pears, peaches, apples, quinces, and figs are produced in the greatest profusion. The climate of this country is most salubrious and healthful."

The mouth of the Rio Grande is about 480 miles from New-Orleans, and may be reached in forty-eight hours in steam-vessels, touching at Galveston on the way.

The Valley of the Colorado of the West.—We are, of course, at a disadvantage here for precise or full information upon this region. The expeditions of Fremont, and the advances of our people, have brought to light much that is valuable. The Colorado is almost unexplored, though parts of it are known to be fertile. The country is immense, whatever may be its character.

"Proportionate with the eastern projection of Florida, and almost in the same latitude with it, the narrow neck of land which constitutes the peninsula of California juts outward from the continent. To the northward and to the northeastward, extends a vast region, more or less fertile, constituting the remaining portions of California. Towards this section, two nations have of late exhibited a partiality, rather unpleasing to each other and to the government which assumes the sovereignty: Great Britain and the United States. Of the movements of the former, there has been some uncertainty. We know determinately the proceedings of our own government. In 1835, Mr. Forsyth offered the Mexican authorities five millions of dollars for the whole country of California. In 1842, laboring under an unfortunate misunderstanding, Captain Jones, of the American navy, seized upon the post and fortifications of Monterey, and floated over them for awhile, the banner of the 'stripes and stars.' The matter was soon after satisfactorily explained. California then, belongs to our subject. It is an important portion of Western America, and, in all probability, must blend its destinies with the regions which reach far northward beyond it. We shall be

* Commercial Review, vol. ii., p. 363.

* Commercial Review, vol. iii., p. 496.

warranted in dwelling upon a country destined to exercise so great an influence upon the prosperity of the Republic.*

The Valley of the Oregon, or Columbia River.—This is the most remote region of America, being almost as distant from the City of Washington as the Island of Great Britain. The question of boundary, so perilous, has been happily settled. South of the 49th° of latitude is ours, which includes the main and most valuable regions of the Oregon and its tributaries.

The Oregon River was discovered by Capt. Gray, of the American ship *Columbia*, in 1792. Its tributaries, &c., were first explored in 1805, by Messrs. Lewis & Clarke. For thirty or forty miles from its mouth, the *Columbia* forms a kind of bay from three to seven miles in breadth, and at the entrance there are dangerous shoals and breakers. It is navigable for 200 or 300 tons' burthen ships as far as the cascades, a few miles above the Willamet River. No part of the river above the Willamet is navigable continuously for more than 20 or 30 miles, and then only by the smaller class of vessels.

The superficial contents of Oregon are upwards of four hundred thousand square miles, being half as large as that of the United States. Mountain-ranges break up the whole country into sections, of which there are three more remarkable than the rest, and presenting each their peculiar characteristics. Parallel with the coasts, and at a distance of one hundred miles, the first chain of mountains is discovered. These are sometimes designated as the Far West Mountains, and at other times as the Presidents' Range, from the fact of there being many peaks, each of which has been honored with the appellation of some former occupant of the White House. Further towards the east, and through the central regions of Oregon, lie the Blue Mountains; and to the extreme eastward, the wild and magnificent Rocky Mountains wall upward to Heaven, and frown with fearful grandeur upon the valleys beneath. It is thus that the "valley countries" of Oregon are formed, by ranges of elevated lands, through which, at certain points, the *Columbia* River has succeeded in forcing its way to the ocean. The course of the *Columbia* to the mouth of the Walla-Walla—a small stream entering it over two hundred miles from the ocean—is nearly due east and west. Here it divides into two great arms or branches, which, pursuing their opposite courses northward and southward, lose themselves at last among the lofty heights of the mountains. The lower branch has received the name of its discoverer, Clarke; the upper communicates with the Lewis, a river discovered by the same party. The *Columbia*, with its tributaries, waters more or less the

three great districts or valleys of which we have been speaking. To these valleys it will be necessary to confine our attention.

The valleys of Oregon have been frequently described. The easternmost, or that between the Blue and the Rocky Mountains, is rocky and barren, with slight exceptions of pasture lands. The middle valley, between the Blue and the Far West Mountains, is more pregnant, and where the Walla-Walla waters it, has developed many beauties of cultivation. The westernmost valley stretches to the Pacific on either side of the *Columbia*, from the Straits of Fuca to the Umpqua River.

"In this valley of fifty thousand square miles—susceptible, to a large extent, of profitable cultivation—a population equal to that of many of our states could be supported to advantage. Hills and valleys range themselves over its surface, and forests, dense forests, the most magnificent in the world, are spread abroad with a munificence of donation. Here, if anywhere, must be the seat of empire, population and wealth beyond the Rocky Mountains,—here, while the inhospitable and barren regions around remain in their primitive desolation. The climate of this favored spot is genial, and the thermometer in summer ranges seldom higher than 80°. During that season, cool and refreshing breezes from the westward and northwestward constantly prevail. The winters are rainy, though mild and healthy. The season of rain sets in in October, and prevails till April; it is regular and constant, but seldom too violent to admit the usual occupations of the people."*

We have on other occasions given many particulars of the most interesting character in relation to this region, its population, trade, advances, &c. It is impossible to say how important it may ultimately become, and remaining an integral part of us, what may be its progress in the course of a few years. It has already its well-organized government, schools, clergy, courts, laws, and press; and not long since the first annual message of its governor was placed before us on the table. With China and the Sandwich Islands its communication is easy, but to the home government almost inaccessible. Should the railroad be accomplished, a thing we regard not so likely since a better southern route has been proposed, Oregon will grow with great rapidity; otherwise, we think for generations the tide of population will prefer the El Dorado regions of California.

"Eastward and westward of the Rocky Mountains, nature has wonderfully contrasted her favors and exhibited her obvious partialities. On the one part, a region stretches out for the most genial climes and soils, in rare agricultural plats, in hill and in plain country, and gentle undulations, with rivers and lakes,

* We draw upon an elaborate paper prepared by us on the Oregon and California question.—*Vide* Southern Quarterly Review, July 1845.

* We again draw from our Oregon pamphlet.

† This is the last extract from ourselves, if the reader will pardon us, for we cannot do better now.

and coasts and havens, unsurpassed, if equalled on the globe; with population, and wealth, and high destinies; with all that God can crown the wants of man. On the other part, uninhabited and uninhabitable wildernesses abounding, deserts barren, broken and wild, arid heights and precipices, mountain-ridges where the rains of Heaven seldom descend—where the irrigating and refreshing streams, seldom make their way, murmuring onward in sweet music to the ocean. In wilds such as these, the savage himself is seldom invited to roam, and the adventurous enterprise of the white man is frightened away.

“But not all the country which stretches outward to the Pacific, from the bases of the Cordilleras, the Rocky or the Chippewan Mountains, is such as this. Nature seldom creates a howling wilderness, but interposes somewhere her gardens and her lawns. She delights not alone in the features of the terrible—she luxuriates in her lines of beauty and her tints of loveliness. If she piles up her rocks and her mountains, Ossa upon Pelion, sky high, she slopes them down in undulating lawns and landscapes—she surrounds the desolation with flowery meads, and blesses her children with a smile as they emerge from the dark valleys and shadows of her frowns. To the westward of the headlands which supply the waters of the Mississippi and the Gulf of Mexico, there are regions of garden-country hither and thither, where the bright colors of nature exhibit themselves, and the streams ripple along the banks of verdant valleys and fertile plains,—where the river leaves the stream, and over its falls and its cataracts rushes onward in impetuous career to the ocean,—where luxuriant forests and rank soils alternate amid navigable streams—where sunshine and health have taken up their domain,—where the civilized man has marked the spot with his hamlet, and his village and his town, and all their cheerful influences and delightful associations.

“To the westward of the Rocky Mountains, the fiat of Deity has not doomed all to a dreary and irrecoverable sterility. The oasis blooms in its midst. The curse which fell upon the earth for the transgressions of man, has not left it all here a hopeless region of wildness and desolation.

“The densely peopled regions of the East are regarding with fonder eyes these remote borders, and indulging vague but stimulating dreams of prosperity and enterprise in their midst. Empire and affluence there, are the visions which flit before the fancies of those whose struggles have hitherto been for existence solely. Disappointed or not, these cherished anticipations will, in any case, largely influence the destinies of the country around which they centre. Speculation may be lost in the attempt to determine the political prospects and political relations of a region so remote. Nations, may divide empire throughout its extent—but this how problematical!

European maritime powers may gain a footing there, colonize, and govern the whole—a vagary even less substantial than the last. We may not undertake to solve the question ourselves. But we would say, if we did, that the progress of things hitherto in North America, indicates far different destinies. The principles of republicanism deeply sown and universally germinating here, point to a better order of things. The Atlantic and Pacific states will unite under a common empire, and have a common destiny. A magnificent republic will stretch out its giant arms northward and southward, and eastward and westward, gathering in, and nourishing, and elevating the millions of human beings, whom Providence is rearing up throughout these wide domains.”

The Valley of the Mississippi.—There has lately appeared from the American press a learned and estimable work, with this title, prepared by Dr. J. W. Monette, of Mississippi.* Though admirably full in its detail of the civil and political history of this region, we regret that the statistical did not receive some portion of attention. We cannot learn the history of the West without this. It is also to be regretted that the work does not contain a good map of the valley to date, showing with precision its limitations and features.

In the progress of our present paper, we shall follow, to some extent, the arrangement marked out by Dr. Monette, and be indebted to him for most of the facts of an historical nature. For all the rest we draw upon a variety of papers, manuscripts, volumes, &c., now before us, and prepared within the past few years.

And first let us clearly fix what is intended and included by the MISSISSIPPI BASIN OR VALLEY. Taking a position on the Gulf of Mexico, at the mouth of the Atchafalaya River in Louisiana, the perimeter or boundary-line will run northwestward to the 40th degree of latitude in the Rocky Mountains, from whence issue the sources of the Platte, Rio Grande, and Colorado;† from this point along the Rocky Mountains, to the sources of Marias River; around the northern sources of Missouri River to the head of Red River branch of the Assiniboin; around the sources of the Mississippi proper to the head of the Kankakee branch of Illinois River; between the confluents of the Canadian Sea and those of Ohio, to the extreme source of Alleghany River; along the dividing line of water source

* History of the Discovery and Settlement of the Valley of the Mississippi by the three great European Powers, Spain, France, and Great Britain, and the subsequent Occupation, Settlement, and Extension of Civil Government by the United States, until the year 1846. By J. W. Monette, M.D. In 2 vols. New-York: Harper & Brothers, 1847.

† We have followed the able geographical writer, Darby, in these particulars. See his valuable letters to the Hon. John C. Calhoun.—Commercial Review, vol. iii., No. 4, p. 352.

towards the sources of streams flowing towards the Atlantic and into the Ohio; between the confluent of Mobile and Tennessee rivers; between the sources discharged into the Mississippi and those of Mobile and Pearl rivers, to the mouth of the Mississippi River; from the mouth of the Mississippi, to the outlet of Atchafalaya. Length of the whole outline, 6,100 miles. Any good map will show these points.

EXTENT OF THE MISSISSIPPI VALLEY.

	Square miles
Valley of the Ohio	200,000
" " Mississippi Proper	180,000
" " Missouri	500,000
" " Lower Mississippi	330,000
Area	1,210,000

Four great nations have exercised dominion within these vast limits, and their possession has been a great source of anxiety, discussion, and hostility. The fiercest battles have resulted—the greatest jealousies, the keenest heart-burnings, and the wildest designs. The arts, the policy, the wisdom of one of these nations have at length prevailed, and won the mastery.

Let us begin with SPAIN. She was the earliest to penetrate the wilderness. It is not for us to speak here of the early and romantic adventurers—Ponce de Lion, Vasquez de Ayllon, Pamphilo de Narvaez, Hernando de Soto, beginning as early as 1512. The expedition of De Soto was brilliant and magnificent. It was as the gorgeous processions of the Crusaders, and as meaningless. Dr. Monette has given an admirable and full history of the unexampled wanderings, lasting through four years, and extending through Florida, Georgia, Alabama, Louisiana, Mississippi, and Arkansas. "It was poetry," says Mr. Irving, "put into action; it was the knight-errantry of the old world carried into the depths of the American wilderness. The personal adventures, the feats of individual prowess, the picturesque description of steel-clad cavaliers with lance and helm, and prancing steed, glittering through the wildernesses of Florida, Georgia, Alabama, and the prairies of the far West, would seem to us mere fiction or romance, did they not come to us in the matter-of-fact narratives of those who were eye-witnesses, and who recorded minute memoranda."*

The Spaniards called this country Florida, and claimed for it an extension north to the French settlement on the St. Lawrence. In 1565, the site of St. Augustine was fixed by Melendez, twenty years before any English settlement in the same region. Thus is St. Augustine the most ancient city in the

United States.* We shall not speak of the encroachments of France and England on this domain, and of the several adjustments of boundaries. Suffice it, that, in 1763, the Perdido River was the western limit of Florida, as it fell into British hands. France also ceded the portion of Louisiana east of the Mississippi River, except the island of New-Orleans, so as to give the whole Mississippi, from its sources to the Gulf, as a British boundary. The western limit of Florida was made the Mississippi; it was divided into East and West Florida, with Pensacola and St. Augustine for capitals.

The products of Florida were soon considerable—sugar, rum, indigo. It passed again into the hands of Spain, and a dispute with the United States about boundaries was the immediate result. The 31° of latitude was settled by the treaty of 1795; and West Florida, extending to the Mississippi, was organized by Spain, as the *District of Baton Rouge*. This district was seized by the United States, in 1810, in another dispute about territory, after the purchase of Louisiana from France. From Pearl River to the Perdido, West Florida was still possessed by Spain, but seized upon by General Jackson by order of Congress, in 1813. During our war with Great Britain, and from the apprehension and fact that it would be the theatre of British operations against us, the Americans also seized upon Fort Charlotte, at Mobile. We pass over the wars of General Jackson, in 1818, in Florida, with the Spaniards—over its cession to the United States, by the treaty of 1819, and the wars with the Creek and Seminole Indians. The population, in 1840, was 54,477; and it was admitted into the Union in 1845.†

Although Florida and Alabama do not belong to the Valley of the Mississippi, yet, as their histories are allied with it, and as we have introduced them, a few statistics will not be misplaced.

Much of the soil of FLORIDA is pine barren, and poor; but there are extensive tracts of richest quality, adapted to sugar, rice, cotton, corn, tobacco, and fruits. The forest growth is magnificent. The crop of 1840 consisted of 898,974 bushels corn, 264,000 bushels potatoes, 7,285 pounds wool, 124 pounds silk cocoons, 75,274 pounds tobacco, 481,000 pounds rice, 12,146,533 pounds cotton, 275,317 pounds sugar. The Indian wars greatly affected the progress of Florida, and cut off its products. The state is now reviving. Tallahassee, the capital, is a city of 2,500 inhabitants; St. Augustine has about the same; St. Mary's, Tallahassee.

* Monette, Vol. I., p. 70.

† Dr. Monette is bitter about the exchange of Texas for Florida, and the delay of admitting these states into the Union. In all of this, as Southerners, we agree with him, but regret that the slightest show of partisanship should have had place in his valuable history.

* Irving's Conquest of Florida; Monette's Valley of the Mississippi. See also a paper by Hon. C. Gayarre, in *Commercial Review*, Vol. III., p. 450. William's Florida.

Bay, Apalachicola, Pensacola, and Key West are either ports of entry or have a coasting trade. The last named has a mournful celebrity—more than fifty vessels being wrecked on its coast annually. It is filled with “wreckers,” and many great abuses have come to light at different times. Their life is a wild one.*

FOREIGN IMPORTS AND EXPORTS OF FLORIDA,
1833-1843.

	Imports	Exports
1833.....	\$83,386.....	\$61,805.....
1834.....	135,798.....	228,825.....
1835.....	98,173.....	61,710.....
1836.....	121,745.....	71,662.....
1837.....	305,514.....	90,084.....
1838.....	168,690.....	122,532.....
1839.....	279,283.....	334,806.....
1840.....	190,728.....	1,858,850.....
1841.....	33,875.....	.....
1842.....	176,980.....	33,384.....
1843.....	158,631.....	760,335.....

Alabama.—The cotton product is most abundant, and minerals inexhaustible, in this state. The census of 1840 gave fourteen small cotton factories, working in all 1500 spindles. This branch of enterprise is on the rapid increase there, as we know, having lately traveled over the state. There are but few rail-roads; but several in contemplation, among which may be named one from Montgomery to Pensacola; from Mobile to Pascagoula, to communicate with New-Orleans; and from Mobile to the Ohio. A road from Montgomery to Mobile remains a great desideratum.†

Mobile, the chief city, we have previously described in the Review. Its progress of late has been retarded. The exports, foreign and coastwise, are, however, enormous,

EXPORTS AND IMPORTS—ALABAMA.

	Imports	Exports
1835.....	\$7,574,692.....	\$525,955.....
1836.....	11,184,166.....	651,618.....
1837.....	9,671,401.....	609,385.....
1838.....	9,688,244.....	524,548.....
1839.....	10,338,159.....	895,201.....
1840.....	12,854,690.....	574,651.....
1841.....	10,981,271.....	530,819.....
1842.....	9,965,675.....	363,871.....
1843.....	11,157,460.....	360,655.....
1844.....	9,907,654.....	442,818.....
1845.....	10,538,228.....	473,491.....

Receipts of cotton at Mobile, 1841, 319,286 bales; 1842, 320,882; 1843, 482,631; 1844, 467,820; 1845; 517,550; 1846, 421,669; 1847, 320,000 bales (about.)

* See Com. Review, Vol. III., p. 275.—Dr. Wurde-
man, now residing in Florida, has given a partial
promise to prepare some papers for us upon this re-
gion. He informs us that the Records at St. Augus-
tine might be of interest to the Louisiana Historical
Society.

† Commercial Review, Vol. III., No. 2; Vol. III.,
No. 3, No. 6, pp. 469, 559; Vol. II., p. 418.—The sub-
ject of cotton manufactures is attracting great at-
tention in Alabama. There is a factory at Tal-
lica, Tallapoosa county, of 1,000 spindles; one at
Scottsville, Bibb county, the Tuscaloosa Factory,
which has existed many years; one near Hunts-
ville, the Bell Factory, 2,000 spindles; one in Perry
county. A factory at Tuscaloosa, now in construc-
tion, will employ 3,000 spindles. There is one also,
we think, at Florence. The factory at Prattsville
will be noticed elsewhere.

(having reached nearly seventeen millions of dollars,) for a city of 12 or 15,000 inhabitants.

Having opened with the Spanish history of the Mississippi Valley, we will proceed briefly to review the FRENCH, according to the arrangement of Dr. Monette.

We pass over the visits of Cartier and Champlain to the northwest, in the 16th and 17th centuries, and the French Jesuits from Canada. Father Allouez, in 1669, learned of this great river of the West, which Marquette and Joliet soon visited. The career, discoveries, and unhappy fate of La Salle, are familiar to all. His was the first attempt to settle the regions of the lower Mississippi, in 1687. Ten years afterwards the French began the occupancy both from the North and South.

In 1712, a trade was opened between Quebec, Louisiana and Mobile Bay, in skins, furs, grain, flour, &c., and exports made thence to the West Indies and Europe. We quote from Dr. Monette:

“As early as the year 1705, traders and hunters had penetrated the fertile regions of the Wabash; and from this region, at this early date, fifteen thousand hides and skins had been collected, and sent to Mobile for the European market. In the year 1716, the French population on the Wabash had become sufficiently numerous to constitute an important settlement, which kept up a lucrative trade with Mobile by means of traders and voyageurs. Nor was the route from Lake Erie unknown. For many years this route had been familiar to the *voyageurs* and *courriers du bois*, who ascended the Miami of the lake by the St. Mary's branch, and, after a portage of three leagues, passed the summit level, and floated down a shallow branch of the Wabash. In the year 1718 this route had been used for two years; for it was established in the year 1716.”

In the year 1746, six hundred barrels of flour were received at New-Orleans from the Wabash. The French authorities began the exploration of the Ohio River in 1749. The jealousies of Britain, however, were soon excited, and long and bloody wars were destined to result.

“[A. D. 1753.] The French court was well aware of the importance of the great Western valley. It was now known that if there were no rich mines of gold and silver north of the Ohio and east of the Mississippi, there was a most inexhaustible mine in the fertility of the soil and the mildness of the climate. A spirit of agricultural industry had been infused into the western settlements; in a few years more, Upper Louisiana, which embraced the Ohio region, might become the storehouse for France and western Europe.”

A treaty of peace, in 1763, gave to Eng-

* Monette, Val. Miss., vol. I., p. 162.

† Ibid., p. 168.

land Canada and New France, being all the territory east of the Mississippi from its source to the Bayou Iberville. A secret treaty at the same time ceded to Spain all the remaining French territories in the Mississippi valley.

Dr. Monette gives a beautiful and affecting picture of the early life and manners of the French settlers in the northwest, almost primitive. He thus speaks of their trades and pursuits:

"The traders kept a heterogeneous stock of goods in their largest room, where their assortment was fully displayed to the gaze of the purchasers. The young men of enterprise, wishing to see the world, sought occupation and gratification as *voyageurs* or boatmen, as agents for the traders, or as hunters, to visit the remote tribes upon the furthest sources of the Mississippi and the Missouri, in company with the trading expeditions which annually set out from the Illinois country.

"Mechanic trades, as a means of livelihood, were almost unknown; the great business of all was agriculture, and the care of their herds and flocks, their cattle, their horses, their sheep, and their swine, and man was his own mechanic."^{*}

The Spanish dominion succeeded quietly over these people. Not so readily, however, the submission to the change of policy when brought under the American government.

The history of the French power in Louisiana, until the cession of that territory in 1763 to Spain, is written with great elaboration by Dr. Monette, and constitutes an interesting division of his work. It consists of six chapters under the following captions: The first colonization of Louisiana until the close of Crozat's Monopoly; Louisiana under the "Western Company" until the failure of Law's Mississippi Scheme; Louisiana to the Natchez Massacre; Louisiana after the Natchez Massacre; Under the Royal Governors until the close of the Chickasá War; After the Chickasá War. We shall not be able to follow these divisions, nor is it necessary, as in other parts of this work everything interesting in the history of Louisiana has been given under different heads. We however make a few extracts, showing the progress of the state.

First, under the grant to Crozat:

"M. Crozat caused settlements or trading posts to be made in the most remote parts of the province, while explorations were extended into the most distant known tribes. Under St. Denys, a settlement and trading-post was established on Red River, on the site of the present town of Natchitoches, in the present State of Louisiana. St. Denys

also explored Red River much further, and advanced on a tour of observation as far as the Rio Bravo del Norte, the present western limit of Texas. About the same time, a small settlement and trading-post was established on the Yazoo, and on Sicily island, and high up the Washita, on the site of the present town of Monroe, afterward known as the 'post of Washita.' M. Charleville, one of M. Crozat's traders, penetrated the Shawanese tribes, then known as the 'Chouanoes,' upon the Cumberland river. His store was situated upon a mound near the present site of Nashville, on the west side of the Cumberland river, near French-lick creek, and about seventy yards from each stream."^{*}

Second, about the year 1742:

"As early as the year 1742, the defence of the country being in the hands of the king's officers and troops, the Indian tribes generally observed a respectful neutrality, or a friendly and commercial attitude. Free from danger and apprehension of Indian violence, agriculture continued to flourish, and commerce, freed from the shackles of monopolies, began rapidly to extend its influence, and to multiply its objects under the stimulus of individual enterprise. Capitalists embarked with alacrity in agriculture and commerce. The trade between the northern and southern portions of Louisiana had greatly augmented, as well as that from New-Orleans to France and foreign countries. Regular cargoes of flour, bacon, pork, hides, leather, tallow, bear's oil, and lumber, were annually transported down the Mississippi in keel-boats and barges to New-Orleans and Mobile, whence they were shipped to France and the West Indies. In their return voyages, these boats and barges from New-Orleans and Mobile, supplied the Illinois and Wabash countries with rice, indigo, tobacco, sugar, cotton, and European fabrics. The two extremes of Louisiana produced and supplied each other alternately with the necessaries and comforts of life required by each respectively. The mutual exchange of commodities kept up a constant and active communication from one end of the province to the other. Boats, barges, and pirogues were daily plying from one point to another, freighted with the rude products of a new and growing country. The great highways of commerce were the deep and solitary channels of the Mississippi and its hundreds of tributaries."[†]

Third, introduction of cotton into Louisiana:

"About this time a cotton-gin, invented by M. Dubreuil, which facilitated the operation of separating the cotton fibre from the

^{*} Monette, Miss. Valley, vol. i., p. 192.

^{*} Monette, Miss. Valley, vol. i., p. 212.

[†] *Ibid.*, p. 295.

seed, created an epoch in the cultivation of cotton in Louisiana, and it began to enter more largely into the products of the plantation."

Fourth, introduction of sugar :

"Sugar-cane had not yet been introduced as a staple product of Louisiana. The first attempt to cultivate the sugar-cane in the province was made by the Jesuits, in the year 1751. This year they had introduced a quantity of cane from St. Domingo, together with several negroes who were acquainted with the process of manufacturing sugar from the juice. They opened a small plantation on the banks of the Mississippi, just above the old city of New-Orleans, and within the limits of the second municipality. The following year attempts were made by others to cultivate the plant and to manufacture it into sugar. Satisfied with the success of the first attempts, many others soon afterward commenced its culture, and within a few years most of the plantations above and below the city, for many miles, had introduced the culture of cane on a small scale, by way of experiment. Several years elapsed, when the Jesuits and some others, having succeeded even above their expectations, M. Dubreuil, a man of capital and enterprise, was induced, in 1758, to open a sugar plantation on a large scale. He erected the first sugar-mill in Louisiana upon his plantation, which occupied the lands now covered by the lower part of the city of New-Orleans, and known as the "Suburb of St. Marigny," below the third municipality. The enterprise of M. Dubreuil having rewarded him with an abundant crop and a ready sale, others were anxious to embark in the same enterprise with large capital.

"Thus, before the close of the year 1760, sugar-cane had been fairly introduced as one of the staple products of Louisiana; yet the art of making sugar was in its infancy. The sugar which was made was consumed wholly in the province, and was of very inferior quality, for want of a knowledge of the granulating process. Before the year 1765, M. Dubreuil, M. Destrehan, and others, had succeeded in making sugar which answered all the purposes of home consumption. Still, the planters had not learned the art of giving it a fine, dry, granulated appearance, such as was produced in the West Indies. The whole product of the province had been, heretofore, barely sufficient for domestic consumption; but in the year 1765 one ship-load of sugar was exported to France; yet so imperfect had been the granulating process, that one-half of it escaped from the casks as leakage before the vessel reached her destination. This was the first export of sugar from Louisiana, and the commencement of her trade in her most valuable staple, which has since continued

to increase up to the present time, until the annual crop of sugar made in Louisiana varied, between the years 1840 and 1845, from 110,000 to 115,000 hogheads, besides as many barrels of molasses."*

In taking leave of the French history of Louisiana, we cannot but experience some emotion. What were the anxieties that had been felt for its advances, what the tender regards and fond imaginings of the future! La Salle would have extended its influences to India, making the Mississippi a highway to the Northern seas. The memory of John Law and his notable scheme blends itself with this romantic and remarkable era. How much had France at heart the fortunes of this colony, and what resources had she cheerfully expended upon it! But the uncertainties and fluctuations of colonial empire have not now to be written.

From a manuscript translation of M. Gayarré's History of Louisiana,† a *Southern* work, which the North American Review sneers at, as usual, we introduce a passage on the fortunes of the Acadians, who were thrown upon the banks of the Mississippi by the hard policy of the English government.

"The principal part of the Acadians, however, who came to Louisiana, had not voluntarily expatriated themselves, but had been expelled from their native soil by England. When Louis XIV. ceded Acadia to Great Britain, he had stipulated that the subjects whom he abandoned should preserve their property, on condition of their swearing fealty and allegiance to Queen Anne. The Acadians, however, refused to bind themselves by this oath, except on the condition of never being compelled to bear arms against France. The English authorities complained of this refusal, but the government at the time thought proper to postpone any extreme measures. Nevertheless, English-

* Monette, Miss. Valley, Vol. I., pp. 297, 298.

† The history of the French dominion in Louisiana has lately been written in that language by the Hon. Charles Gayarré, of New-Orleans, and examined in De Bow's Review, Vols. I. and III. The third volume, containing Spanish history, will be delayed until the results of a search at Madrid for documents can be known, the State of Louisiana having appropriated a large sum for the purpose. We are happy to announce that Mrs. Stewart, the amiable and accomplished lady of Commodore Stewart, has been engaged for some time in the translation of M. Gayarré's history. It will be illustrated with notes, and a succinct view of the late progress in Louisiana. Mrs. Stewart spends her winters in New-Orleans, and has had the advantages of conference with the ablest minds. Such passages of her translation as we have seen—and there is a chapter before us now in manuscript—are admirably executed. The rest we have not examined. Mrs. S. is now in New-York, and the work will, she informs us, appear in the fall. We shall do full justice to its merits. At present we give a short extract from her manuscript, and commend the work in advance as an exceedingly valuable addition to our historical libraries, with all the freshness and interest of a romance.—Sept. 1827.

policy was not asleep; but soon arousing from its apparent drowsiness, the whole world was dismayed by the cold cruelty of its decrees. Acadia is a sterile country, offering so few attractions to emigration that it is probable long years would have elapsed before the introduction of an English population sufficiently powerful to serve as a check to the French; and besides, the Acadians had given so loud an utterance to their enmity, that it would have become necessary to restrain them by placing posts and garrisons among them, at a cost to the government every year of a great pecuniary sacrifice. It was a difficult position for Great Britain, principally on account of the contiguity of Acadia to the Canadas, the conquest of which she was at that time attempting, and who found zealous defenders in the Acadians, their neighbors. But as Great Britain never yet recoiled before the employment of any means to reach her object, her decision was soon made, and orders were given to seize upon the Acadians without distinction of age or sex, and disperse them at different intervals of distance on the shores of the other Anglo-American colonies. Regardless of the misery and pain to be inflicted, she imagined that these wretched exiles would intermingle with the numerous population amongst which they were thrown. This decree was executed with the most unrelenting rigor; and a large part of the Acadian population was at different epochs, and in small bands, driven on board the English vessels. In quitting the homes of their native soil, the Acadians were not permitted to carry anything away with them but the sentiment of their misfortunes and the eternal hatred to which their cruel oppressors were so justly entitled. Driven like vile herds, these Acadian families, amounting to seven thousand souls, were heaped together on board the vessels of their persecutors, and when they turned a last look on their country, to ejaculate an eternal adieu, the flames which consumed their villages and the English bayonets which bordered their shores met their despairing gaze! Thus did ancient Messenia behold her children fly before the decree of exile issued by the ferocious Lacedemonians! Thus was renewed in the new world those scenes of atrocity and tragic grief of which Greece had been the witness, and which the pen of the author of Anacharsis has represented under such terrific coloring. The expressions of Barthelemy are but too applicable to the fate of these modern Messenians!

"A whole nation driven from their homes, wandering amongst nations astounded at their misfortunes—youth, enfeebled by grief, bearing upon its shoulders the authors of its being—women strewed along the ground, with the infants which they press to their

breasts swooning and expiring from debility! Here are tears and groans—the deepest expressions of despair, and there a speechless anguish and a frightful silence. If to the most cruel of the Spartans was confided the task of delineating this picture of horrors, some remains of pity would cause the pencil to drop from his hands! The English colonists received with humanity those unfortunate exiles, who had been thrown on their territory with as much indifference as if they were the refuse of the human race. They blushed at the crime committed by England, and resolved to repair it by every means in their power. Pennsylvania, New-Jersey, and the southern provinces granted assistance to these victims of English policy. It was hard indeed for these wounded hearts to thus accept the bread of pity at the hands of the brothers of their persecutors, speaking the same language. The Acadians had heard that on one point of North America that spotless banner still waved, which they loved with such heroic devotion. The hopes of beholding it, at once reanimated their courage."

The period which intervenes between the year 1757, or the English occupation of the upper Ohio region, and the close of the American war, is the subject of the third book of Dr. Monette's work, which is entitled *Great Britain in the Valley of the Mississippi*. It is a period of the liveliest interest, from the steady approaches of the Anglo-Saxon across the mountains—from the romantic exploits and fierce struggles of the pioneers, and their hardy enterprises. We cannot even casually refer to these.

In 1762, northern Virginians began to advance from the Potomac over the mountains, to the head waters of the Monongahela; from James River the adventurers attained the tributaries of Kenhawa; from Roanoke and North Carolina, they passed along the base of the Blue Mountains. The next year lands were patented by Virginia, on the Ohio, far beyond the Apalachian Mountains. In 1769, was formed, says Dr. Monette, the first Anglo-American Mississippi Company, of which, among other stockholders, were to be George Washington, Richard Henry Lee, Authur Lee, &c. This company failed in its object. In 1770, Ebenezer Zane selected the site of Wheeling.

The year 1770 is distinguished for the first advances into Kentucky, and the romantic career of Daniel Boone, its immortal "backwoodsman." The fame of Kentucky was upon all lips, and the Cumberland mountains—the Rubicon—at last passed; an epoch as great as that of Cæsar's. With five families besides his own, the march of Daniel Boone from North Carolina began. He was the great pioneer—the patriarch of the wilds, whose monument should stand erect in the valley, as his name in the song of Byron.

With one Michael Stoner, this fearless man made the passage from Clinch River to the Falls of the Ohio, 400 miles, through untrod wildernesses, conducting a party of surveyors. He returned to join the western army, and not long after conducted his family to the banks of the Kentucky River, founding *Boonsborough*, a name retained to this day. Thus, says Dr. Monette, Daniel Boone's wife and two daughters may be considered the first white women who made their residence in Kentucky. The population of the town rapidly increased.

The war of the Revolution extended beyond the mountains. We shall not chronicle these deeds of sanguinary strife. The peace which resulted delivered Florida from the power of Britain, and her dominion ceased upon the Mississippi.

Thus, in the changes of dynasties and the fretful course of empire and of arms, the Spaniard returns to his haunts of old, and the banners of Spain are floating again on the great river by whose banks her adventurous De Soto had sickened in despair, and died. For forty-one years this banner waved.

We pass over the remonstrances of the French population against a transfer of their allegiance, the repinings, the conventions, the career of O'Reilly, and the blood of the martyrs to French liberty. The site of St. Louis was selected in 1769, by M. La Clede. The population of Louisiana, according to Judge Martin, was as follows :

PARISHES AND SETTLEMENTS, EXCLUSIVE OF NEW-ORLEANS.*

1. Below the city on the river.....	570
2. Bayou St. John and Gentilly.....	307
3. Tchoupitoulas.....	4192
4. St. Charles.....	639
5. St. Jean Baptiste.....	544
6. La Fourche.....	267
7. Iberville.....	376
8. Point Coupee.....	783
9. Attakapas.....	409
10. Avoyelles.....	314
11. Natchitoches.....	811
12. Rapides.....	47
13. Washita.....	110
14. Arkansas.....	88
15. St. Louis, or Upper Louisiana.....	891

10348

New-Orleans contained 468 houses, and 3,190 souls, 1,803 of which only being free whites. In 1777, Dr. Monette thus refers to the city :

"The same year witnessed the first regular commercial intercourse between the ports of the United States and the city of New-Orleans. The pioneer in this commerce was Oliver Pollock, a citizen of Baltimore, who had been residing in the city of New-Orleans since the close of O'Reilly's administration. During the year 1777 he received the appointment of United States' agent in New-

Orleans for the purchase and supply of military stores, ammunition and munitions of war for the use of the American posts upon the Ohio frontier, as well as subsequently for those in the Illinois country. Being an active and energetic man of business, and an enterprising merchant of New-Orleans, he soon received the favorable attention of Governor Galvez, which greatly facilitated his commercial operations in behalf of the federal government, and enabled him to render important services to the cause of the American Revolution."*

The trade of the Mississippi becoming now of some consequence, from the settlements throughout its valley, the Spanish authorities deemed the occasion fitting for enlarging their coffers by the imposition of tribute duties. These the western people resisted, and threatened to defeat by a resort to arms.

In 1788, the city of New-Orleans was devastated by a fierce conflagration, which brought ruin and dismay, but eventually resulted in moderating the commercial restrictions which had been imposed on its trade. We extract from Dr. Monette an account of this fire, and the subsequent improvements of the city.

"On the 21st of March, about three o'clock in the afternoon, the chapel of a Spaniard in Chartres-street took fire, and, by a strong wind, it soon spread over the city, until nine hundred houses were consumed, besides an immense amount of property of every description. This was the severest calamity which had ever befallen the city, and threw the whole province into want and embarrassment. Provisions of all kinds became scarce, and great distress prevailed in the city. To prevent actual suffering and famine, the government was obliged to take measures for supplying the necessities of the people. A contract was opened for the supply of a large quantity of flour from the Ohio region, upon which large advances of money were made; and, as an additional inducement to traders and boatmen, the privilege of introducing other articles was granted to those who brought cargoes of flour.

"The embarrassment and privations occasioned by this unforeseen calamity in the city, admonished the governor of the necessity of relaxing all the commercial restrictions upon the river trade, and of releasing those individuals who had been imprisoned for former violations of the revenue laws, and to restore the property previously seized and confiscated.†

"A new impulse was given to the trade of the western people with the Spanish provinces generally, through the port of New-

* Monette, Val. Miss., Vol. I., p. 477.

* Monette, Val. Miss., vol. i., p. 456.

† Ibid. p. 476.

Orleans. The surplus products of the settlements on the Monongahela, the Ohio, the Kentucky and Cumberland rivers, consisted of flour, pork, beef, whisky, apples, cider, lumber, horses, cattle, and many other agricultural and manufactured products, which met with a ready sale in New-Orleans, as well as other points upon the river. An active trade in breadstuffs had likewise been opened with the city of Philadelphia, by sea, and a state of general good feeling existed between the western people and the Spanish authorities in Louisiana.

"Enterprise was awakened in the West, and capital freely invested in rearing those products most in demand in Louisiana and the Spanish provinces throughout the continent, as well as in the West India Islands; and men of enterprise and capital embarked their means in the navigation of the river and in the extension of western commerce.

"For two years this state of amicable trade continued, and from all these settlements emigrants and adventurers continued to descend, upon every spring flood, in company with the regular trading boats from the Ohio. Many of them, well pleased with the climate and agricultural facilities of the country, remained and entered into the cultivation of tobacco, cotton, and indigo, then the most valuable staples of Louisiana. Others, who had contemplated a permanent residence in the Florida districts, averse to the tenets and rites of the Catholic Church, to which all were required to adhere, yielding to their prejudices, returned to the United States, to enjoy freedom of opinion in their religious sentiments and the church rituals."*

The Baron Carondelet conducted great improvements in New-Orleans. He constructed the canal which took its name. "Thus, in the autumn of 1795, was there a navigable canal route opened from the city, by way of the lake, to the sea; and the spring of 1796 witnessed ships at anchor in the rear of the city."

Of the stormy period of western history at the close of the eighteenth century, we have before written, and do not think it well to delay the reader now. There were wars and rumors of wars, and excitement on all hands. Negotiations on the part of the anxious Americans were successful; and Spain, forced into the arms of France, left her favorite province and her dominion to pass into the hands of the United States. The ceremonies of delivery from Spain to France, and from France to our government, were imposing.

After the final transfer of New-Orleans, and before the arrival of the American troops, a company of young Americans was raised in the city for its protection. They

were commanded by Daniel Clarke and mustered in Canal street. They were joined by many Creoles, and ultimately numbered about 300. Dr. Monette makes the following interesting note, which we cannot forbear transcribing. We have often heard our friend, Col. Maunsel White, refer with enthusiasm to these times.

"This volunteer battalion was formed at the instance of the following gentlemen, then resident in New-Orleans, viz.: George Martin, since parish judge of St. Landry, Colonel Reuben Kemper, George King, George Newman, Benjamin Morgan, Daniel Clarke, American Consul, Dr. William Flood, since a distinguished physician of New-Orleans, Maunsel White, and Woodson Wren, present postmaster in Natchez. But few of the original members of the battalion are living at this time, which is now forty-one years since the delivery of Louisiana to the United States commissioners. There were two of the survivors still living in Adams county, Mississippi, in February, 1845. These are Woodson Wren and George Newman. Martin states this battalion to have been composed of only one hundred and twenty Americans; but Dr. Wren and George Newman, Esq., both members of the battalion, sustain the authority of the text."*

The condition of Louisiana at this period is thus represented. Population, 1803, according to the report of the consul at New-Orleans, 49,500, including West Florida, Mobile, and Pensacola. New-Orleans contained 8,000, Mobile, 800; the proportion is now sustained, Pensacola, 404; Upper Louisians, 6,028. The commerce of New-Orleans extended to all the west, and to the eastern states, and Europe. Its river trade employed five hundred flat boats. The cotton crop of 1802, was 20,000 bales of 300 lbs.; sugar, 5,000 hhds.; indigo, 3,000 lbs. A dozen stills were producing taffia, from molasses; a sugar refinery in the city produced 20,000 lbs. of loaf sugar. Exports of 1802, 50,000 bbls. of flour; 3,000 bbls. of salt beef and pork; 2,000 hhds. of tobacco; 34,000 bales of cotton; 4,000 hhds. of sugar; and 800 casks of molasses.†

The second volume of Dr. Monette's history is entitled, the UNITED STATES IN THE VALLEY OF THE MISSISSIPPI. For all practical purposes, it is the more valuable of the two, and constitutes the only history of this period, taken in a comprehensive whole. The space occupied is between 1775 and 1846; an introductory chapter being appended, upon the manners and customs of the frontier population. It is illustrated with a map of Texas in 1836; a later one would have been much more desirable, though

* Monette, Val. Miss., Vol. I., pp. 479, 480.

* Monette's Valley of the Miss., vol. I., p. 561.

† Ibid., p. 566.

this is sufficient for general purposes. The Rio Grande appears upon it as the boundary as far as 29° 30' N. latitude, where the line strikes N. E. toward the Guadalupe mountains, along which it is thence drawn. Texas being considered by Dr. Monette, justly, as originally included in Louisiana, accounts for the appearance of the map. The first volume, we ought to have observed, contains two other maps, showing the limits of Louisiana in 1740; of Florida, and of the British American colonies and the country around the lakes, at a still more remote period.

We cannot take up the American portion of the history of the Mississippi valley, without feeling that we have approached an epoch of great events and of signal triumphs of our republican policy. Hemmed in by a chain of mountains and by the sea, it was conceived at the period of the Revolution, by some of the best thinkers, that the Atlantic republics were too numerous and scattered, even then, to present other than discordant elements, and require a less powerful government than centralism itself. Could they have supposed that the barriers of the mountains were to be overleaped, even while their doubts were fresh upon their lips; that the allied or confederated republics would spring up, far as the remote west would trace them; that they would scale the Rocky Mountains, and intermingling with the Chinese on the Pacific shores, or claim the Sandwich Islanders for their neighbors; that the shores of the South seas and the Gulf of California would receive their counsels from the cabinets at Washington; and Mexico herself present a feeble barrier to their interminable progress. The allied republics, doubling, and even increasing three-fold their numbers, and yet, "one, like the wave!" A single state in the valley of the Mississippi, unexplored at the period of the Revolution, with a population equal nearly to that of the then thirteen colonies combined; a single city more populous than all the Atlantic cities together, at the same epoch; and these results in the memory and experience of men who have lived through them all. *Such is the Valley of the Mississippi!*

However, for reflections of this sort we shall have abundant space hereafter, when, having completed the civil history, we take up the statistical, of wealth, population, progress and prospects.

The domestic life of the western pioneers combined, it may be imagined, simplicity and wildness. The hunting-shirt, the leggings, the breech-cloth and moccasins, borrowed from the Indians, were a common attire. The dwellings were log-pens in squares, with a door, and often the luxury of a window. A plastering of clay and the usual smoky chimney and dirt floor, and we were about to say, squalling children; but of

this history has no mention. But then the mechanic and the merchant comes, and how soon these log-cabin comforts are gone forever!

"As soon as the mechanic and merchant appeared, sashes with two or four lights of glass might be seen set into gaps cut through the side logs. Contemporaneously, old barrels began to constitute the tops of chimneys, and joists and plank, sawed by hand, took the place of puncheons.

"At first, log cabins were built in villages or clusters, and surrounded with stockades formed by logs set upright in the ground, and made bullet-proof for mutual protection against Indian surprise and massacre.

"The inside appearance of a frontier habitation was also unique, and adapted to the circumstances of the times. Bureaus, sideboards and armors were unknown, and so were their uses. The whole furniture of a room consisted of one home-made bedstead, and one trundle bedstead under it for children, both well furnished with bear-skins and buffalo robes instead of blankets; a few split-bottomed chairs, and a few three-legged stools, a small movable bench or table, supported by two pairs of cross-legs for the family meals; a shelf and water-bucket near the door. The naked wood and clay walls, instead of the ornamental paper and tapestry of the cities, were embellished with the whole wealth of the family wardrobe. The frocks, dresses and bed-gowns of the women, the hunting-shirts, pantaloons and arms of the men, all were suspended around the walls from wooden hooks and pegs, and served as a good index to the industry and neatness of the mistress of the house. The cooking utensils and table furniture consisted of a few iron pots, "pewter plates and dishes," spoons, knives and forks, which had been transported from the east with their salt and iron; besides these, a few wooden bowls or "trenchers," "noggins and gourds," completed the list of cooking and eating utensils."*

The chase fed and clothed these hardy woodmen, and they had always in the rude larder good stock of such wild flesh and fowl as their progeny might contemplate with watery mouth, and sigh for at this day in vain. The pheasant and the opossum have verily degenerated since then. Who would eat a domesticated or *civilized* rabbit, smoke-dried and rank, with the greasy odors of steam and machinery? And then the "journey cake;" or, not to be pedantic about the matter, familiar "*Johnny cake*." How benignant has been our household deities in preserving to us this relic of olden time! It might have been lost in tradition, or corrupted, like the arts of Egypt or of Greece.

* Monette's Valley of the Miss., vol. II. p. 6.

But no: it smokes yet by the cheerful embers—not in your dashing marble-columned mansion, to be sure, but in your good old-fashioned chimneys of the Carolinas and Virginia. Who but would write the praise of “Johnny cake,” and teach the excellent proportions which go to make it up? Refine not too much your meal, good Mrs. Cook, and see that the salt be sprinkled with a sparing hand. Let not the heat too intensely reach it by the hearth. Now softly turned that there be not too much crisp, and that either side have a like show of brownness. Pass under the knife to the board, and while yet the smoke passes, ply softly the new-churned butter. But who can teach the *rationale* of “Johnny cake?” Your books are worthless. It can be made nowhere than on those old hearths we commemorate. Send your special agents to teach the starving Irish the virtues of corn-meal, as many as you please; they do not know these virtues themselves. Old Nanny, who watched our boyhood—Heaven praise her—at our fondly-remembered homestead, can give a better lesson on the merits and *modus preparandi* of “Johnny cake” than them all. Their blunders would shock her—these vaunting commissioners of frying-pans and dough-boards! But we are growing epicurean; and no wonder, as we write in the far East, (New-York,) where Indian meal is worked up into such villainous compounds. Dr. Monette celebrates the “hog and hommony,” too, of those days of yore—the great staples with which the western granaries and “porkeries” are feeding the world.* We adopt the “hommony,” but waugh the “hog!” Our voice is *still* about the “hog”—your gross “bacon!” We will have none of him. “But a young and tender suckling, his voice as yet not broken, but something between a childish treble and a grumble—the mild forerunner or *prælude* of a grunt.”

“See him in the dish, (every one will recognize Charles Lamb,) his second cradle, how meek he lieth!—wouldst thou have had this innocent grow up to the grossness and indocility which too often accompany maturer swinehood? Ten to one he would have proved a glutton, a sloven, an obstinate, disagreeable animal—wallowing in all manner of filthy conversation. From these sins he is happily snatched away—

Ere sin could blight or sorrow fade
Death came with timely care—

His memory is odoriferous. No clown curseth, while his stomach half rejecteth, the rank bacon—no coal-heaver bolteth him in

reeking sausages. He hath a fair sepulchre in the grateful stomach of the judicious epicure, and for such a tomb might be content to die.”

But this people began to aspire to other luxuries than hog and hominy and peltry clothes, well as these might be in their way. A caravan set out annually for the east of the mountains with furs, &c., for barter. The caravan consisted of several men with horses and pack-saddles and pouches of shelled corn, and thus they passed to Baltimore or to Frederick. Here salt, nails, iron, pewter plates and dishes, were the equivalent for hides, ginseng, snake-root and bear's grease. A barrel of salt was worth a cow and a calf in the West.

And then the administration of justice. My Lord Chief-Justice of the King's Bench could not have presided with more dignity than him of Oyer, Terminer, *instantly* memory, under his forest canopy—Lynch!

“Night was the season for their official acts. Chief-Justice ‘Birch’ established his tribunal under a forest canopy. Before him the culprit was arraigned, and with form and ceremony tried, and, as a matter of course, convicted. Sentence was pronounced, and without delay the penalty was inflicted, without stint or mercy. Tied securely to a tree, he was made to feel the rod, dealt by many sturdy hands, until justice was satisfied. If perchance he were an old offender, or had claims to the title of a ‘British Tory,’ his wounds were dressed, not with oil and wine, but with ‘tar and feathers.’ As the culprit retired from this ordeal, he was informed by Judge Lynch that the operation would be repeated in a few days unless he withdrew from the jurisdiction of the court. If there were confederates in crime, this warning served for all.

“This tribunal was resorted to only in extreme cases, and, although liable to occasional abuse, it was a great protection to honest people against the most abandoned intruders, who defied the usual forms of law.”

The life of the boatmen, that hardy and unique class which soon formed itself on the western rivers, and exists to the present day, to a certain extent, is graphically delineated by Dr. Monette. We make an extract:

“Steam had not exerted its magic influence on the western waters, and the rich cargoes which ascended the Mississippi in keel-boats and barges were propelled by human labor for nearly two thousand miles, slowly advancing against the strong current of these rivers. The boatmen, with their bodies naked to the waist, spent the long and tedious days traversing the ‘running board,’ and pushing with their whole force against their strong setting-poles, firmly fixed against the shoulder. Thus, with their heads suspended nearly to

* There have lately appeared two works from the press, entitled “Indian Meal,” and “The Pig.” The reader may have some use for them. They have not yet come to our hands.

the track on the running-board, they propelled their freighted barge up the long and tedious route of the river. After a hard day's toil, at night they took their 'fillee,' or ration of whiskey, swallowed their homely supper of meat half burned and bread half baked, and retiring to sleep, they stretched themselves upon the deck, without covering, under the open canopy of heaven, or probably enveloped in a blanket, until the steersman's horn called them to their morning's 'fillee' and their toil.

"Hard and fatiguing was the life of a boatman; yet it was rare that any of them ever changed his vocation. There was a charm in the excesses, in the frolics, and in the fightings which they anticipated at the end of the voyage, which cheered them on. Of weariness none would complain; but rising from his hard bed by the first dawn of day, and reanimated by his morning draught, he was prepared to hear and obey the wonted order, 'Stand to your poles and set off!' The boatmen were masters of the winding-horn and the fiddle; and as the boat moved off from her moorings, some, to cheer their labors, or to 'scare off the devil and secure good luck,' would wind the animating blast of the horn, which, mingling with the sweet music of the fiddle, and reverberating along the sounding shores, greeted the solitary dwellers on the banks with news from New-Orleans.

"Their athletic labors gave strength incredible to their muscles, which they were vain to exhibit, and fist-fighting was their pastime. He who could boast that he had never been whipped was bound to fight whoever disputed his manhood. Keel-boatmen and barge-men looked upon raft-men and flat-boatmen as their natural enemies, and the meeting was the prelude to a 'battle-royal.' They were great sticklers for 'fair play,' and whoever was worsted in battle must abide the issue without assistance.

"Their arrival in port was a general jubilee, where hundreds often met together for diversion and frolic. Their assemblages were often riotous and lawless to extremes, when the civil authorities were defied for days together. Had their numbers increased with the population of the West, they would have endangered the peace of the country; but the first steamboat that ascended the Ohio sounded their death-knell, and they have been buried in the tide, never more to rise."*

The progenitors of the western population were a race moulded in the strongest casts of nature. Of athletic forms and massive stature, of powers of endurance and action, they were more than matches for the savages themselves in their own pursuits of war and the chase. Yet were they happy, and surrounded by

the joys of homes and families; and their youths and maidens tripped the dance with moccasins and brogans, with a zest and grace which would not have shamed our fashionable life.

Famous in the memory of the West are Daniel Boone, Simon Kenton, Robert Patterson, and George Rogers Clark. They belong to the classic era of the country, and their exploits will yet find a Homer. Dr. Monette's sketches of these characters are to the life. We have only space for a few incidents in the career of one.

Daniel Boone was born a frontier's man, west of the mountains of Virginia and North Carolina, of excellent heart and head, and great bodily vigor. He first plunged into the wilderness of Kentucky in 1769, two hundred miles west of the Cumberland mountains. Here the beautiful plains of Kentucky were spread out to his view. The Indians surprised and took him prisoner, but with his companions he escaped. At another time he escaped alone. "Then followed the trying time of the wary hunter. Alone in the wilderness, without the means of procuring sustenance, or of defence against the beasts of prey, without weapons or hunting implements, he roamed sole white tenant of the 'dark and bloody ground,' compelled to starve, or subsist upon roots, shrubs, and fruits. Thus did Daniel Boone spend the summer of 1770, until fortunately relieved by his brother's return in the autumn."

In 1779, he was a close prisoner among the Indians of Canada. He gained upon their confidence, and accommodated himself readily to their manners and course of life. They were off their guard. He escaped. Throughout all the Indian wars he was a warrior and a chief. On the return of peace his domain was stripped from him in the conflict of land titles. Boone, in disgust, departed the vicinities of civilization, and plunged still deeper into the wilderness. He crossed the Mississippi, and with his family fixed a home in Spanish Louisiana, on the banks of the Missouri. There death at last closed the scene, and his remains, long after, were removed to the theatre of his early exploits by the people of Kentucky.

During the period of the Revolution, and afterwards, until 1795, the West was one continued theatre of ruthless and sanguinary warfare, in which all the charities and mercies of life were lost. The ruthless British foe, combined with the treacherous, unrelenting, unsparing savage, carried the shrieks of torture through the forests, applied the torch to the cabin and the village, and by its glare, and with the midnight yell, butchered the helpless inmates, young children, women and old age. Space will not allow us even to refer to these, or to the thrilling scenes, the unexampled adventures, to which they gave rise. Indeed, the whole history of the

* Monette, Val. Miss., vol. ii., p. 19.

conquests of the white men over the western Indian, even through the wars of 1815, and of a later period, is a department of our history which loses nothing by the repetition, and which is related by Dr. Monette with a fulness to be found in no other work.

Ohio county was organized in 1776, and soon after the county of Kentucky. In 1779 the western emigrants suffered from a famine of the most serious kind. Even after the price of corn had fallen to thirty dollars per bushel, continental currency, the tavern rates in Ohio county, we are told, were established by the County Court.

1. Breakfast or supper.....	\$4 00
2. Half a pint of whisky.....	6 00
3. Dinner.....	6 00
4. Lodging, with clean sheets.....	3 00
5. Horse to hay over night.....	3 00
6. One gallon of corn.....	5 00
7. One gallon of oats.....	4 00
8. Half a pint of whisky, with sugar.....	8 00
9. One quart of strong beer.....	4 00

The currency, continental money, continued to diminish in value until 1781, when the charge for dinner was fixed by the court at twenty dollars; breakfast and supper at fifteen dollars.*

At the close of the American war, Kentucky and Ohio exhibited great prosperity. "About the first of June, emigrants began to arrive by hundreds, and spread like a flood of fertilizing water over the whole country. Merchandise from Philadelphia and Baltimore, transported in wagons across the mountains, by way of Ligonier and Cumberland, to Pittsburgh and Brownsville, and thence boated down the Ohio, in keel-boats and arks, to Limestone and the falls, began to arrive in the new settlements. The same summer Kentucky was greeted with the first dry-goods store, opened in Louisville by Daniel Broadhead, from Brownsville, on the Monongahela. The second store was not opened until the following year, when Colonel James Wilkinson, of Maryland, also from Brownsville, opened the first dry-goods store in Lexington.

"The population of all the settlements, up to the year 1783, exceeded twelve thousand souls. This number was greatly augmented by the daily arrivals during the succeeding summer; and the spring of 1784 found the entire number increased to more than twenty, and soon, thirty thousand souls."[†]

In the few last years of the eighteenth century, the whole western country was agitated and convulsed by party influences, many of which were hostile to the United States government. Kentucky, in particular, experienced such perplexing difficulties by her remoteness from the seat of government of Virginia, from which it occupied three months for the orders of her governors to reach her, and by the obstructions to her navigation and commerce imposed by the

Spanish authorities at New-Orleans, she appeared ripe for some outbreak of a serious character. Informed of this dissatisfaction, the British and Spanish governments opened immediately their intrigues for the purpose of bringing all the West under the jurisdiction of Louisiana or of Canada. The French, too, were striving to throw down a force upon lower Louisiana, sufficient for its conquest and restoration to their arms. Never was there a more perilous period in the history of any country—more trying to patriotism—more dangerous to social order. Five distinct western parties are recorded at this period.

"1. In favor of forming a separate and independent Republic, under no special obligation of union, except such as might be most advantageous.

"2. In favor of entering into commercial arrangements with Spain, and of annexing Kentucky to Louisiana, with all the advantages offered.

"3. Opposed to any Spanish connection, and in favor of forcing the free navigation of the Mississippi by the arms of the United States, with the invasion of Louisiana and West Florida.

"4. In favor of soliciting France to claim a retrocession of Louisiana, and to extend her protection to Kentucky.

"5. The strongest party, however, was in favor of a separation from Virginia, and admission into the Federal Union as a free and independent state, leaving it to the general government to regulate the Mississippi question with Spain."^{*}

Pittsburgh, the great coal and iron city of the Valley, was simple Fort Pitt in 1783, an insignificant settlement. In 1786 the "*Gazette*" was published in its midst, the *first newspaper west of the mountains*. The town began a rapid growth and opened its commerce with New-Orleans. It became a store-house for the western posts, and a depot for the western army. Western Pennsylvania had become an important region. Her superabundant corn descended the Mississippi in whisky. Horses, cattle and stock also descended, castings, cutlery for agriculture, &c. Everything went on encouragingly until an excise duty upon whisky, manufactured principally in the West, aroused the keenest sensibilities and hostilities of this region.

In 1787 Congress established a territorial government, including all possessions of the United States *northwest of the Ohio river*. The first court of justice in this region was convened in 1788. The ceremonies of opening this Court, are thus given by Dr. Monette, and are amusing enough:

"A procession was formed on the point near the residence of the citizens; the sheriff, with a drawn sword, in advance, followed

* Monette's Val. Miss., vol. ii., p. 112.

† Ibid., p. 143.

* Monette's Val. Miss., vol. ii., p. 184.

by the citizens, officers of the garrison at Fort Harmar, the members of the bar, the judges of the Supreme Court, the governor, and a clergyman with the judges of the newly organized Court of Common Pleas, in the order they are named.

Arriving at the hall of the Campus Martius, the whole procession was counter-marched into it, and the judges Putnam and Tupper took their seats on the bench; the audience was seated, and, after the divine benediction was invoked by the Rev. Dr. Cutler, the high sheriff, Ebenezer Sproat, advanced to the door, and proclaimed aloud, "Oyes! Oyes! a court is opened for the administration of even-handed justice to the poor and the rich, to the guilty and the innocent without respect of persons; none to be punished without a trial by their peers, and in pursuance of the laws and evidence in the case."*

In 1790 the name of Cincinnati began first to be heard. It became "a centre of fashion and refinement;" frame-houses began to appear, and in the course of the summer forty log cabins were added to the town. The site of the town remained a forest, partly leveled, with stumps and logs still evident.

Tennessee, which has become so important as to be second only in the value of its products to any state in the Union, had but a slender beginning. Even before the Revolution a few straggling parties from North Carolina had reached its limits; and it was not before 1778 that the jurisdiction of that state was extended regularly over it. The fame of this western region of the old North State, invited emigration from the East in flocks. "There is a charm in the virgin earth and the primeval forests of the West, which perfectly bewilders the mind of the emigrant from old and dense settlements." Nashville, so called in honor of the distinguished General Nash, was laid out in 1784. It was soon created into a state, and increased with extraordinary rapidity. "Tennessee has not inaptly been called the mother of states. From her bosom has issued more colonies for the peopling of the great Valley of the Mississippi than from any one state in the American Union. Her emigrant citizens have formed a very important portion of the population of Alabama, of the northern half of Mississippi, and of Florida. They have also formed the principal portion of the early population of the states of Missouri, Arkansas, and Texas."

The twelfth chapter of the second volume of the "Valley of the Mississippi," traces the progress of Ohio from its infancy to its present proud stature and importance. We mark the gradual progress of population up the valleys of the Scioto and the Miami on

the Western Reserve, on the Maumee and the Wabash, the Illinois country, and the origin and growth of Cincinnati, Cleveland, Chillicothe, Detroit, Marietta, etc. The picture which is drawn of the famous seat of Blannerhasset, will have a lively interest with all of our readers.

"Among the emigrants to the Northwest-ern Territory during this year was Herman Blannerhasset, an accomplished gentleman and a man of fortune, from Ireland. Driven from his native country by political difficulties, he sought an asylum on the bosom of the beautiful Ohio. He purchased from Colonel Devoll, of Virginia, the island in that river, one mile below the mouth of the Little Kenahawa, and soon afterward commenced his improvements. As this has become classic ground in Ohio, it is worthy of a more detailed notice. Before the year 1801 had closed, Mr. Blannerhasset had erected a splendid mansion on the upper end of the island, and had surrounded it with fine pleasure-grounds, gardens, and orchards of choice fruit. His study was furnished with a large and well-selected library, an extensive philosophical apparatus, and everything which taste and learning could desire. A fine scholar and well versed in languages, he spent much of his time in study, when not engaged in social intercourse with his intelligent neighbors from Belpre and Marietta. So tenacious was his memory, that he is said to have been able to repeat some of the books of Homer by rote in the original Greek. His wife was accomplished in all the acquirements of female elegance and learning: music, painting, drawing, and dancing were her amusements, and the social converse of cultivated minds and festive amusements of the young beguiled the happy hours. Surrounded with everything that could make existence desirable and happy, and cheered by a rising and brilliant family, his seat was almost a terrestrial paradise, as described by Wirt, until the acquaintance of Aaron Burr blasted every hope and ruined every source of enjoyment. This former paradise is now faintly commemorated in the solitary and desolate spot remaining of 'Blannerhasset's Island.' The mansion was consumed by fire in 1810, and since then every vestige of improvement has disappeared."*

The history of the territories of Mississippi and Orleans, the regions of Texas, and the Northwest territory, extending to the Mississippi, present the concluding incidents of our sketch of the Mississippi Valley. We shall necessarily be brief upon these.

The Mississippi Territory.—This included the country surrendered by the Spanish authorities lying north of 31° latitude, and was organized in 1798. The Chattahoochee was

* Monette, Val. Miss., vol. ii., p. 247.

* Monette's Val. Miss., vol. ii., p. 324.

its eastern, and the Mississippi its western limit. The first code of laws was adopted in 1801 and 1802. The first newspaper, established in 1802 by Colonel Andrew Marschalk, was the "Natchez Gazette," and was continued by him for forty years, under different names.

"Among the incidents in the early history of the Mississippi Territory, was the violent death of the notorious robber, Mason. This fearless bandit had become the terror of the routes from New-Orleans and Natchez through the Indian nations. After the organization of the territorial government, and the opening of roads through the wilderness to Tennessee, the return of traders, supercargoes and boatmen, to the northern settlements with the proceeds of their voyage, was on foot and on horseback, in parties for mutual protection through the Indian nations, and often rich treasures of specie were packed on mules and horses over these long and toilsome journeys. Nor was it a matter of surprise, in a dreary wilderness, that bandits should infest such a route. It was in the year 1802, when all travel and intercourse from New-Orleans and the Mississippi Territory was necessarily by way of this solitary trace, or by the slow-ascending barge and keel, that Mason made his appearance in the Mississippi Territory.

"Long accustomed to robbery and murder upon the Lower Ohio, during the Spanish dominion on the Mississippi, and pressed by the rapid approach of the American population, he deserted the 'Cave in the Rock,' on the Ohio, and began to infest the great Natchez Trace, where the rich proceeds of the river trade were the tempting prize, and where he soon became the terror of every peaceful traveler, through the wilderness. Associated with him were his two sons, and a few other desperate miscreants; and the name of Mason and his band was known and dreaded from the morasses of the southern frontier to the silent shades of the Tennessee River. The outrages of Mason became more frequent and sanguinary. One day found him marauding on the banks of the Pearl, against the life and fortune of the trader; and before pursuit was organized, the hunter, attracted by the descending sweep of the solitary vulture, learned the story of another robbery and murder on the remote shores of the Mississippi. Their depredations became at last so frequent and daring, that the people of the territory were driven to adopt measures for their apprehension. But such was the knowledge of the wilderness possessed by the wily bandit, and such his untiring vigilance and activity, that for a time he baffled every effort for his capture.

"Treachery, at last, however, effected what stratagem, enterprise, and courage had in vain attempted. A citizen of great respectability, passing with his sons through the wilderness,

was plundered by the bandits. Their lives were, however, spared, and they returned to the settlement. Public feeling was now excited, and the governor of the territory found it necessary to act. Governor Claiborne accordingly offered a liberal reward for the robber, Mason, dead or alive! The proclamation was widely distributed, and a copy of it reached Mason himself, who indulged in much merriment on the occasion. Two of his band, however, tempted by the large reward, concerted a plan by which they might obtain it. An opportunity soon occurred; and while Mason, in company with the two conspirators, was counting out some ill-gotten plunder, a tomahawk was buried in his brain. His head was severed from his body and borne in triumph to Washington, then the seat of the territorial government.

"The head of Mason was recognized by many, and identified by all who read the proclamation, as the head entirely corresponded with the description given of certain scars and peculiar marks. Some delay, however, occurred in paying over the reward, owing to the slender state of the treasury. Meantime, a great assemblage from all the adjacent country had taken place, to view the grim and ghastly head of the robber-chief. They were not less inspired with curiosity to see and converse with the individual whose prowess had delivered the country from so great a scourge. Among those spectators were the two young men, who, unfortunately for these traitors, recognized them as companions of Mason in the robbery of their father.

"It is unnecessary to say that treachery met its just reward, and that justice was also satisfied. The reward was not only withheld, but the robbers were imprisoned, and, on the full evidence of their guilt, condemned and executed at Greenville, Jefferson county.

"The band of Mason, being thus deprived of their leader and two of his most efficient men, dispersed, and fled the country. Thus terminated the terrors which had infested the route through the Indian nations, known to travelers as the 'Natchez and Nashville Trace.'"

In 1803, when the surrender of Louisiana to the United States was expected, men of all grades, professions and pursuits, flocked to Mississippi, with the intention of descending, at the first opportunity, to New-Orleans. Natchez became a place of much importance. It was a large village, consisting chiefly of small wooden buildings, of one story, distributed over an irregular, undulating surface, with but little regard to system or cleanliness.†

* Monette's Val. Miss., vol. ii., pp. 531, 532, 533.

† Dr. Monette notices a curious currency in Mississippi at this time. "Cotton Receipts," negotiable by law, as bills of exchange or money. They represented so much cotton deposited in public gins for cleaning, as the farmers were generally too poor to have private gins of their own.

The following extract from the deposition of William Eaton, is all that we can give in relation to the designs of the celebrated Aaron Burr, so famous in the memory of the West :

"He now laid open his project of revolutionizing the western country, separating it from the Union, establishing a monarchy there, of which he was to be the sovereign, New-Orleans to be his capital ; organizing a force on the waters of the Mississippi, and extending conquest to Mexico. I suggested a number of impediments to his scheme, such as the republican habits of the citizens of that country, and their affection toward our present administration of government ; the want of funds ; the resistance he would meet from the regular army of the United States on those frontiers ; and the opposition of Miranda in case he should succeed to republicanize the Mexicans.

"Mr. Burr talked of the establishment of an independent government west of the Alleghany, as a matter of inherent constitutional right of the people ; a change which would eventually take place, and for the operation of which the present crisis was peculiarly favorable. There was, said he, no energy in the government to be dreaded, and the divisions of political opinions throughout the Union, was a circumstance of which he should profit. There were very many enterprising men among us who aspired to something beyond the dull pursuits of civil life, and who would volunteer in this enterprise ; and the vast territory belonging to the United States, which, offered to adventurers, and the mines of Mexico, would bring strength to his standard from all quarters. I listened to the exposition of Colonel Burr's views with seeming acquiescence. Every interview convinced me more and more that he had organized a deep-laid plot of treason in the West, in the accomplishment of which he felt fully confident ; till at length I discovered that his ambition was not bounded by the waters of the Mississippi and Mexico, but that he meditated overthrowing the present government of our country. He said if he could gain over the marine corps, and secure the naval commanders, Truxton, Preble, Decatur, and others, *he would turn Congress neck and heels out of doors ; assassinate the President ; seize on the treasury and the navy, and declare himself the protector of an energetic government.* The honorable trust of corrupting the marine corps, and of sounding Com. Preble and Capt. Decatur, Col. Burr proposed confiding to me. Shocked at this proposition, I dropped the mask, and exclaimed against his views. He talked of the degraded situation of our country, and the necessity of a *blow* by which its energy and its dignity should be restored ; that if that blow could be struck here at this time, he was confident of the support of the best blood of America. I told Colonel Burr he deceived himself in presuming that he,

or any other man, could excite a party in this country who would countenance him in such a plot of desperation, murder, and treason. He replied that he, perhaps, knew better the dispositions of the influential citizens of this country than I did. I told him one solitary word would destroy him. He asked, what word ? I answered, *Usurper !* He smiled at my hesitation, and quoted some great examples in his favor."*

The Mississippi territory in 1803, did not number in population more than 40,000, and that was distributed in three distinct sections—the Natchez district, the Tombigbee settlement, including the annexed portions of Florida, near the Mobile Bay ; the third was north of the great bend of Tennessee River. An Indian conspiracy about this period threatened the extermination of the second, and a fearful conflict was the result. Consternation was spread throughout Alabama. The slaughter at Fort Mims presents unparalleled horrors. We have seen a manuscript drawn up by Colonel Pickett, of Alabama, who designs publishing a history of his native state, which delineates to the life all the terrors of the scene. The details were furnished him by one of the few survivors of that day, now living in Alabama.

The act of 1807 constituted the *Alabama Territory*. In 1816 its population was 30,000 ; and two years afterward it had increased to 70,000 ; and in 1819 the State of Alabama was admitted into the Union, and soon rose to her present dignity and importance.

The *Territory of Orleans* was established in 1804, soon after the purchase, and included such portions of Louisiana as were southward of the Mississippi River, &c. It soon became the theatre of events of the most imposing kind—the schemes of Burr, the counter-movements of Wilkinson and Claiborne ; arrests, crimination and recrimination, and martial law. "During the month of January, great excitement prevailed in New-Orleans. The troops were kept continually marching through the streets of the city. The volunteer battalion of New-Orleans was upon constant duty, and the city and its environs presented the appearance of a besieged town, with numerous gun-boats and armed vessels in port, and stationed at different points upon the river and adjacent lakes."

Dr. Monette pronounces the highest encomiums upon the administration of Governor Claiborne during this crisis. He was firm, sleepless, and energetic. Wilkinson, too, is ably exonerated from the charges of treason by connivance in the plans of Burr, or of cherishing similar plans of his own. General Wilkinson he represents as a man of towering ambition, but there is no evidence that it was not to serve his country. He did receive favors from the Spanish governor, commer-

cially, and money from the same source, as a security for the safety of Louisiana in Spanish hands. An invasion of Mexico was with him, too, a favorite project, long meditated. With a view to it he had even brought about the appointment of Lieutenant Pike, who explored the routes and collected information. But in none of this does it seem that he was other than a shrewd speculator upon events, willing in everything to serve his country, and his country first. This is his defence by Dr. Monette, who also vindicates him from censure in the proceedings in arresting Burr's accomplices. The only objection we can have to this portion of the history is, the bitterness with which a respectable portion of the citizens who were opposed to what they thought an unconstitutional and tyrannical procedure, are denounced. The temper of history should never be ruffled.

We pass over the seizure of the Spanish Fort at Baton Rouge, by the Americans, under Captains Depasseau and Thomas, the latter of whom is still living at a ripe old age in that town, and all the brilliant movements of our soldiers and citizens under General Jackson during the war of 1812, as events sufficiently understood by our readers, and sufficiently discussed by us on previous occasions. This portion of the work will be read with lively regard. We introduce a passage showing the advances of the city :

"Near the close of the year 1815, the entire population of Louisiana did not exceed ninety thousand souls, of whom one-half were blacks. The greater portion of this number were concentrated in the city of New-Orleans, and upon the river coast, for thirty miles below, and seventy miles above the city. The inhabitants of these river settlements were chiefly Creole French, with a small intermixture of Anglo-Americans. On the Lafourche, for 50 miles below its efflux, and upon the Teche, for 50 miles below Opelousas, was also a dense French population. Several bayous west of the Atchafalaya were likewise occupied by the same people, and others in the delta of Red River, and extending as high as Natchitoches, but chiefly below Alexandria. A few scattering French habitations had been formed on Red River, many miles above Natchitoches, and also upon the Washita as high as the post of Washita, and above the east present town of Monroe. In all these settlements west of the Mississippi, but few Anglo-Americans had arrived before the purchase of Louisiana. As late as the admission of that state into the Federal Union, the French were the most predominant class in the vicinity of Alexandria, as well as on the river coast below Baton Rouge.

"It was only after the year 1815, when Louisiana was relieved from the dangers of foreign invasion, and began to reap the advantages of steam navigation on the river, that the state and New-Orleans began to take the proud rank they now enjoy in population,

commerce, agriculture, and arts. Enterprising emigrants and capitalists began to develop the unbounded resources of this great agricultural state. Since that time the Anglo-Americans have advanced into every portion of the state, and intermixed, by settlement and marriage, with the French, until at last the English language has nearly superseded the French, even in the concentrated settlements near New Orleans, as well as in one-half of the old French part of the city.

"In the Florida parishes the number of French was comparatively small at the cession of the province of Louisiana, and the proportion had greatly diminished in 1810, when the Spanish authority was rejected by the inhabitants, previous to their annexation to the State of Louisiana. Since that period, the increase of population has been effected chiefly by emigrants from the State of Mississippi and from the western states generally; and the French language is almost unknown as a colloquial dialect."

The *Northwestern Territory*, besides the State of *Ohio*, which was carved out of it, contained the germs of three other states: the county of Knox giving rise to *Indiana*, St. Clair to *Illinois*, Wayne to *Michigan*. *Indiana* was made a territory in 1800, *Illinois* in 1809, *Michigan* in 1807. The three territories together at the opening of the war did not exceed forty thousand inhabitants.

"In the year 1832 the tide of emigration began to set toward Michigan territory. Steamboat navigation had opened a new commerce upon the lakes, and had connected the eastern lakes and their population with the *Illinois* and Upper *Mississippi*. The immense lake navigation encircled the peninsula of *Michigan*. It became an object of exploration. Its unrivaled advantages for navigation, its immense tracts of the most fertile arable lands, adapted to the cultivation of all the northern grains and grasses, attracted the attention of western emigrants. The tide soon began to set strong into *Michigan*. Its fine level and rolling plains, its deep and enduring soil, and immense advantages for trade and commerce, had become known and duly appreciated. The hundreds of canoes, pirogues, and barges, with their half-civilized *couriers du bois*, which had annually visited *Detroit* for more than a century, had given way to large and splendid steamboats, which daily traversed the lakes from *Buffalo* to *Chicago*, from the east end of *Lake Erie* to the southwestern extremity of *Lake Michigan*. Nearly a hundred sail of sloops and schooners were now traversing every part of these inland seas. Under these circumstances, how should *Michigan* remain a savage wilderness? The *New-England* states began to send forth their numerous colonies, and the wilderness to smile."

* Monette's Val. Miss., vol. ii., p. 515.

† Ibid., vol. ii., p. 523.

The Huron District, Michigan, west of the lake, was constituted the *Wisconsin Territory* in 1836. The remote settlements in this territory west of the Mississippi, were attached to it under the title, *District of Iowa*; two years afterwards, from the rapid increase of population, converted into a territory. Thus were laid the foundations of these important states, which have, as it were, by magic, sprung up in the northwest, challenging all history for a precedent.

We cannot but close this picture in the language of our author:

"At the close of the year 1845, such had been the general increase of the inhabitants in the states and territories comprised within the limits of the original 'Northwestern Territory,' as organized in 1787, that the regions which fifty years before, had been occupied as the abodes and hunting-grounds of a few naked, roving bands of savages, were now inhabited by three millions and a half of the most active, enterprising, and commercial people in the world, producing and enjoying all the luxuries and comforts of civilized life, with the improvements, refinements, and intelligence of the oldest nations in the world.

"By the state census for the year 1845, the entire population of the states and territories is as follows:

1. State of Ohio.....	1,732,832 souls.
2. " Indiana.....	854,321 "
3. " Illinois.....	705,011 "
4. " Michigan.....	304,285 "
5. Territory of Wisconsin.....	150,000 "

"The above states, in 1845, had forty members of Congress, and Wisconsin one delegate."

The Territory of Louisiana included the upper portion of the purchase from France, and became, in 1812, *Missouri Territory*, extending from 33° to 41° north. The southern portion, or that below the line 36° 30', was, in 1819, made the *Arkansas Territory*.

The storm which attended the admission of *Missouri* into the Union in 1820, from the fanaticism of parties and the famous "compromise," is familiar to all. The rapid subsequent progress of the commonwealth we shall directly see.

"While the State of Tennessee was pouring her redundant population into the northern half of Mississippi, she did not withhold her numerous emigrants from the Arkansas territory. Wealthy planters and capitalists from Mississippi, Louisiana, Tennessee, and even from Georgia, had their faces turned to the fertile and salubrious regions upon Red River, in the southwest corner of the Arkansas territory. Surveys and explorations were progressing rapidly in this region, and numbers were advancing to the occupancy of choice locations for their future homes. Nor was it long before the Federal Government caused

the surveyed lands free from the Indian claim to be exposed to public sale, when not reserved to the actual occupants.

"Nor was the western portion of the Arkansas territory the limit of American progress in that quarter. Hundreds of adventurous families from the western and southern states, attracted by the liberal offer of lands in Texas, advanced to swell the colonies established by American proprietors within grants profusely made by the Republic of Mexico. Settlers for these remote colonies advanced from the western frontier of the United States, descended the Mississippi to the mouth of Red River, and thence, ascending that stream to Shreveport, proceeded by a direct route into the eastern portion of Texas, and sought their favorite colony."*

The concluding pages of Dr. Monette's able history are devoted to the history of the settlement, independence, and government of Texas,† and her admission as a state into the Union. We shall not go over this ground, considering it not embraced in our plan at present, but on another occasion will do full justice to this interesting and important section of our Union.

Thus have we sketched the outlines of events which have transpired in the valley of the Mississippi, since the first dash of its great waters was heard by civilized man. Nation after nation have exercised their empire in its midst, and sought to control its destinies. But what was this great valley when it passed into the exclusive control of the American Union, after nearly two centuries of monarchical rule; and what has it become in scarcely more than a generation since? It seems almost impossible to realize that fact and not fiction supplies the material upon which we draw for the details of this history. The world has heard with amazement that a mighty empire has grown up in the interior region of North America, rivaling in arts, and progress, and resources, the most advanced nations of Europe; and bidding fair to rival even India itself in the denseness of its population. It will be our province now to furnish the tabular statements which evince something of this, though we regret as yet they are meagre; and by combining and comparing them, and deducing the obvious conclusions, we shall be enabled to present a more satisfactory and valuable view of the great West than could be furnished in any other way. The length to which this paper may be extended, and the great labor it may cost, should not be allowed to influence us in this matter.

* Monette's Val. Miss., vol. ii., pp. 555, 556.

† Since the annexation, the population of Texas has been rapidly increasing from the southern and western states. The cultivation of sugar and cotton has progressed in similar ratio; and we may expect in a very few years to find it one of the most considerable states in the southwest.

* Monette, Miss. Val., vol. ii., p. 541.

Let us open with the state of LOUISIANA. This state is in length 270 miles, and in breadth 210, comprising an area of 45,350 square miles, a very limited portion of which may be considered in cultivation. Millions of acres of the best soil are unreclaimed in the best locations. The products of the state are chiefly cotton, rice, and sugar; but such is the extension of the last, that it must in the result monopolize nearly the whole planting capital. Rice might become an important staple, such is the abundance of lands suited to its culture, and rival in amount the products of Carolina and Georgia. Great facilities for inland navigation exist in the state, and some of the finest rivers. Internal improvements have hitherto been limited; the longest rail-road is scarcely thirty miles at this time, and extends towards the Mexican Gulf. An extensive line was begun to Nashville, five hundred and sixty-four miles, but has been entirely abandoned. The other

roads are from four to six miles, except the Feliciana, which is twenty miles, but doing very little. There are several short canals. The capital in manufactures in 1840 was \$6,430,699.

"There were in the state, 99,888 horses and mules; 381,248 neat cattle; 98,072 sheep; 323,220 swine; poultry to the value of \$283,559. There were produced sixty bushels of wheat; 107,353 bushels of oats; 1,812 bushels of rye; 5,952,912 bushels of Indian corn; 834,341 bushels of potatoes; 24,651 tons of hay; 49,283 lbs. of wool; 1,012 lbs. of wax; 119,824 lbs. of tobacco; 3,604,534 lbs. of rice; 152,555,368 lbs. of cotton; 119,947,720 lbs. of sugar. The products of the dairy were valued at 153,069 dollars; of the orchard, at 11,769 dollars; of lumber, at 66,106 dollars. There were made 2,884 gallons of wine; and 2,233 barrels of tar, pitch, &c."

FOREIGN TRADE AND COMMERCE OF LOUISIANA FROM 1805 TO 1845.

Years	Exports			Imports
	Domestic	Foreign	Total	
1805	\$2,338,483	\$1,033,062	\$3,371,545	
1806	2,357,141	1,530,182	3,887,323	
1807	3,161,381	1,159,174	4,320,555	
1808	537,711	723,390	1,261,101	
1809	344,303	197,621	541,924	
1810	1,753,974	136,978	1,890,952	
1811	2,501,842	148,208	2,650,050	
1812	1,025,602	34,869	1,060,471	
1813	1,013,667	31,486	1,045,153	
1814	383,709	3,482	387,191	
1815	5,055,858	46,752	5,102,610	
1816	5,251,833	351,115	5,602,948	
1817	8,241,254	783,558	9,024,812	
1818	12,176,910	747,399	12,924,309	
1819	8,950,921	817,832	9,768,753	
1820	7,242,415	353,742	7,596,157	
1821	6,907,599	364,573	7,272,172	3,379,717
1822	7,303,461	675,184	7,978,645	3,817,238
1823	6,769,410	1,009,662	7,779,072	4,283,125
1824	6,442,946	1,485,874	7,928,820	4,539,769
1825	10,965,234	1,617,690	12,582,924	4,290,034
1826	9,048,506	1,235,874	10,284,380	4,167,521
1827	10,602,832	1,126,165	11,728,997	4,531,645
1828	10,163,342	1,784,058	11,947,400	6,217,881
1829	10,898,183	1,487,877	12,386,060	6,857,209
1830	13,042,740	2,445,952	15,488,692	7,599,083
1831	12,835,531	3,926,458	16,761,989	9,766,693
1832	14,105,118	2,425,812	16,530,930	8,871,653
1833	16,133,457	2,807,916	18,941,373	9,590,505
1834	23,759,607	2,797,917	26,557,524	13,781,809
1835	31,265,015	5,005,808	36,270,823	17,519,814
1836	32,226,565	4,953,263	37,179,828	15,117,649
1837	31,546,275	3,792,422	35,338,697	14,020,012
1838	30,077,534	1,424,714	31,502,248	9,496,808
1839	30,995,936	2,188,231	33,184,167	12,864,942
1840	32,898,059	1,238,877	34,136,936	10,677,190
1841	32,665,618	1,521,865	34,387,483	10,256,350
1842	27,427,422	976,727	28,404,149	8,033,591
1843			26,653,927	8,170,015
1844			30,498,307	7,826,789
1845			27,157,495	9,354,397

Mississippi.—In 1840, there were in this state, 109,227 horses and mules; 623,197 neat cattle; 128,367 sheep; 1,001,209 swine; poultry to the value of \$369,482. There were produced 196,626 bushels of wheat; 1,654 bushels of barley; 668,624 bushels of

oats; 11,444 bushels of rye; 13,161,237 bushels of Indian corn; 175,196 lbs. of wool; 6,835 lbs. of wax; 1,630,100 bushels of potatoes; 83,471 lbs. of tobacco; 777,195 lbs. of rice; 193,401,577 lbs. of cotton. The produce of the dairy was valued at \$359,585;

of the orchard at \$14,458; of lumber, \$192,794; tar, pitch, &c., 2,248 barrels.

There were in this state, in 1840, seven commercial and sixty-seven commission houses engaged in foreign trade, with a capital of \$673,900; 755 retail dry-goods and other stores, employing a capital of \$5,004,420; 228 persons engaged in the lumber trade, employing a capital of \$132,175; forty persons employed in internal transportation, and fifteen butchers, packers, &c., employing a capital of \$4,250.

The capital in manufactures was \$1,797,727. The exports and imports of the state are effected through New-Orleans. The chief staple is cotton.

Arkansas.—In 1840, the whole amount employed in manufactures was \$424,647. There were in this state, 51,472 horses and mules; 188,786 neat cattle; 42,151 sheep; 393,058 swine; poultry to the value of \$109,468. There were produced 105,878 bushels of wheat; 6,219 bushels of rye; 4,846,632 bushels of Indian corn; 189,553 bushels of oats; 293,608 bushels of potatoes; 64,943 lbs. of wool; 1,079 lbs. of wax; 148,439 lbs. of tobacco; 5,454 lbs. of rice; 6,028,642 lbs of cotton; 1,542 lbs. of sugar; 586 tons of hay; 1,039 tons of hemp and flax. The products of the dairy were valued at \$59,205; of the orchard, at \$10,680; of the forest, at \$176,617.

There were ten commercial and ten commission houses engaged in foreign trade, with a capital of \$91,000; 263 retail dry goods and other stores, with a capital of \$1,578,719; 263 persons employed in the lumber trade, with a capital of \$12,220. The foreign trade of this state not being direct, is merged in that of other states, especially Louisiana.

Tennessee.—Capital in manufactures in 1840, \$3,731,580. There were in this state, 341,409 horses and mules; 822,851 neat cattle; 741,593 sheep; 2,926,607 swine; poultry valued at \$606,969. There were produced 4,569,692 bushels of wheat; 4,809 bushels of barley; 7,035,678 bushels of oats; 364,320 bushels of rye; 17,118 bushels of buckwheat; 44,986,188 bushels of Indian corn; 1,060,332 lbs. of wool; 850 lbs. of hops; 50,907 lbs. of wax; 1,904,370 bushels of potatoes; 32,233 tons of hay; 3,344 tons of hemp and flax; 29,550,432 lbs. of tobacco; 7,977 lbs. of rice; 27,701,277 lbs. of cotton; 1,217 lbs. of silk cocoons. 258,073 lbs. of sugar. The products of the dairy were valued at \$472,141; and of the orchard, at \$367,105; value of lumber produced, \$217,606; 3,236 barrels of tar, pitch, &c., were made. Cattle are exported from the southern parts.

There is an abundance of limestone. Gypsum in large quantities has been discovered. Copperas, alum, nitre and lead are among

the minerals, and some silver has been found. Saltpetre forms a considerable article of commerce. There are numerous salt springs, and some mineral springs.

Kentucky.—Capital in manufactures, in 1840, \$5,945,259. There were 395,853 horses and mules; 787,098 neat cattle; 1,008,240 sheep; 2,310,533 swine; poultry to the value of \$536,439; there were produced 4,803,152 bushels of wheat; 17,491 bushels of wheat; 17,491 bushels of barley; 7,155,974 bushels of oats; 1,321,373 bushels of rye; 8,169 bushels of buckwheat; 39,847,120 bushels of Indian corn; 1,786,847 lbs. of wool; 742 lbs. of hops; 38,445 lbs. of wax; 1,055,085 bushels of potatoes; 88,306 tons of hay; 9,992 tons of hemp and flax; 53,436,909 lbs. of tobacco; 16,376 lbs. of rice; 691,456 lbs. of cotton; 737 lbs. of silk cocoons; 1,377,835 lbs. of sugar. The products of the dairy amounted to \$931,363; of the orchard, \$434,935; of lumber, \$130,329. There were made 2,209 gallons of wine.

Among the mineral productions of Kentucky, are iron ore, coal, salt and lime. The salt licks, as the springs are called, from the fact that cattle and wild animals have been fond of licking around them, are numerous, and salt is extensively manufactured, not only for home consumption, but for exportation. The greater part of the exports of this state pass down the Mississippi to New-Orleans, and its chief imports are brought in steamboats by the Ohio River and other tributaries.

Missouri.—Capital in manufactures in 1840, \$2,704,405. There were in this state 196,132 horses and mules; 433,875 neat cattle; 348,018 sheep; 1,271,161 swine; poultry valued at \$270,647. There were produced 1,037,386 bushels of wheat; 9,801 bushels of barley; 2,234,947 bushels of oats; 68,608 bushels of rye; 15,318 bushels of buckwheat; 17,332,524 bushels of Indian corn; 562,265 lbs. of wool; 56,461 lbs. of wax; 783,768 bushels of potatoes; 49,083 tons of hay; 18,010 tons of hemp and flax; 9,067,913 lbs. of tobacco; 121,121 lbs of cotton; 274,853 lbs. of sugar. The products of the dairy were valued at \$100,432; of the orchard at \$90,878; of lumber at \$70,355.

Illinois.—Capital in manufactures in 1840, \$3,036,512. There were 199,235 horses and mules; 626,274 neat cattle; 395,672 sheep; 1,495,254 swine; poultry valued at \$309,204. There were produced 3,335,393 bushels of wheat; 82,251 bushels of barley; 4,988,008 bushels of oats; 88,197 bushels of rye; 57,884 bushels of buckwheat; 22,634,211 bushels of Indian corn; 650,007 lbs. of wool; 17,742 lbs. of hops; 29,173 lbs. of wax; 2,025,520 bushels of potatoes; 164,932 tons of hay; 1,976 tons of hemp and flax; 564,326 lbs. of tobacco; 460 lbs. of rice;

200,947 lbs. of cotton; 1,150 lbs. of silk cocoons; 399,813 lbs. of sugar. The products of the dairy were valued at \$428,175; of the orchard at \$126,756; of lumber, \$203,666. Value of skins and furs, \$39,412. There were made 474 gallons of wine.

Indiana.—Capital in manufactures in 1840, \$4,132,043. There were in this state, 241,036 horses and mules; 619,980 neat cattle; 675,982 sheep; 1,623,608 swine; poultry to the value of \$358,594. There were produced 4,049,375 bushels of wheat; 28,015 bushels of barley; 5,931,605 bushels of oats; 129,621 bushels of rye; 49,019 bushels of buckwheat; 28,155,887 bushels of Indian corn; 1,237,919 lbs. of wool; 38,591 lbs. of hops; 30,647 lbs. of wax; 1,525,794 bushels of potatoes; 178,029 tons of hay; 8,605 tons of flax and hemp; 1,820,306 lbs. of tobacco; 3,727,795 lbs. of sugar. The products of the dairy were valued at \$742,269; of the orchard, at \$110,055; of lumber, at \$420,791. There were made 10,265 gallons of wine; and value of skins and furs, \$220,883.

Ohio.—Capital in manufactures in 1840, \$16,905,257. There were in this state, 430,527 horses and mules; 1,217,874 neat cattle; 2,028,401 sheep; 2,099,746 swine; poultry to the value of \$551,193. There were produced 16,571,661 bushels of wheat; 212,440 bushels of barley; 14,393,103 bushels of oats; 814,205 bushels of rye; 633,139 bushels of buckwheat; 33,668,144 bushels of Indian corn; 3,685,315 lbs. of wool; 62,195 lbs. of hops; 38,950 lbs. of wax; 5,805,021 bushels of potatoes; 1,022,037 tons of hay; 9,080 tons of hemp and flax; 5,942,275 lbs. of tobacco; 4,317 lbs. of silk cocoons; 6,363,386 lbs. of sugar. The products of the dairy were valued at \$1,848,869; of the orchard, at \$475,271; of lumber, \$262,821. There were made 11,524 gallons of wine, and 6,809 tons of pot and pearl ashes.

Michigan.—Capital in manufactures in 1840, \$3,112,240. There were in this state, 30,144 horses and mules; 185,190 neat cattle; 99,618 sheep; 295,890 swine; poultry to the value of \$82,730. There were produced 2,157,108 bushels of wheat; 127,802

bushels of barley; 2,114,051 bushels of oats; 34,236 bushels of rye; 113,592 bushels of buckwheat; 2,277,039 bushels of Indian corn; 153,375 lbs. of wool; 11,381 lbs. of hops; 4,533 lbs. of wax. There were produced 2,109,205 bushels of potatoes; 130,805 tons of hay; 755 tons of hemp and flax; 1,602 lbs. of tobacco; 266 lbs. of silk cocoons; 1,329,784 lbs. of sugar. The products of the dairy were estimated at \$301,052; and of the orchard, at \$16,075; and of lumber, at \$392,325.

Wisconsin.—Capital in manufactures in 1840, \$635,926. There were in this territory, 5,735 horses and mules; 30,269 neat cattle; 3,462 sheep; 51,383 swine; value of poultry produced, \$16,167. There were produced 212,116 bushels of wheat; 11,062 bushels of barley; 406,514 bushels of oats; 1,965 bushels of rye; 10,654 bushels of buckwheat; 379,359 bushels of Indian corn; 419,608 bushels of potatoes; 6,777 lbs. of wool; 1,474 lbs. of wax; 135,288 lbs. of sugar. The products of the dairy were valued at \$35,677.

Iowa.—Capital in manufactures in 1840, \$199,645. There were in this territory, 10,794 horses and mules; 38,049 neat cattle; 15,354 sheep; 104,899 swine; poultry to the value of \$16,529. There were produced 154,693 bushels of wheat; 728 bushels of barley; 216,385 bushels of oats; 3,792 bushels of rye; 6,212 bushels of buckwheat; 1,406,241 bushels of Indian corn; 23,039 lbs. of wool; 2,132 lbs. of wax; 234,063 bushels of potatoes; 17,953 tons of hay; 313 tons of hemp and flax; 8,076 lbs. of tobacco; 41,450 lbs. of sugar. The products of the dairy were valued at \$23,609; of the orchard, \$50; of lumber, \$50,280. Value of skins and furs, \$33,594.

Indian or Western Territory.—This is guarantied to the Indians who have been driven westward. It is 600 miles long, and 300 to 600 broad. The river Platte is on its north; Missouri and Arkansas, east; Red River, south; and desert, west.

The following tables will furnish a summary of the products of the Western States compared with that of the rest of the Union.

AGRICULTURAL PRODUCTS OF THE UNITED STATES, 1845.*

State or Territory.	Popula- tion in 1840.	Present estimate popu'tion.	No. bushels of wheat	No. bushels of barley	No. bushels of oats.	No. bushels of rye.	No. bushels buckwht	No. bushels Ind Corn
Maine.....	501573	575500	502000	273000	1564000	185000	69000	1912000
New-Hampshire.....	284574	291500	647000	123000	1942000	425000	154000	1828000
Massachusetts.....	737699	817000	241000	162000	1856000	594000	126000	3098000
Rhode Island.....	108830	120000	5000	51000	200000	47000	4000	731000
Connecticut.....	309978	320000	114000	26000	1646000	1010000	444000	2649000
Vermont.....	291948	298000	854000	51000	3593000	321000	300000	1728000
New-York.....	2428921	2626000	1620000	3574000	23700000	3560000	3347000	13250000
New-Jersey.....	373306	409000	1050000	8500	4912000	2954000	900000	7314000
Pennsylvania.....	1724033	1960000	12580000	141000	19826000	11929000	3322000	17126000
Delaware.....	78085	79000	410000	4500	828000	53000	13000	2713000
Maryland.....	470019	485500	4884000	2700	1691000	944000	109000	3723000
Virginia.....	1239797	1255000	11885000	84600	8888000	1441000	..	27272000
North Carolina.....	753419	760000	1969000	3600	2673000	217000	..	14857000
South Carolina.....	594398	600000	1168000	3600	700000	48000	..	8184000
Georgia.....	691392	784000	1571000	11800	833000	64000	..	13320000
Alabama.....	590756	660000	980000	7200	1527000	76000	..	16650000
Mississippi.....	375651	586000	378000	1800	1189000	21600	..	2167000
Louisiana.....	352411	440000	..	..	..	2000	..	8360000
Tennessee.....	829210	910000	8340000	5500	8625000	384000	26000	70265000
Kentucky.....	779828	835000	4769000	15400	13091000	2548000	14000	54625000
Ohio.....	1519467	1760000	13572000	219600	24447000	798000	950000	57600000
Indiana.....	865866	860000	7044000	35200	13902000	221000	73000	30625000
Illinois.....	476183	722000	4563000	101200	12957000	143000	99000	25584000
Missouri.....	383102	540000	1525000	11000	5166000	81000	19000	15625000
Arkansas.....	97574	140000	2427000	900	436000	12000	..	8250000
Michigan.....	212267	320000	7061000	197200	4815000	77000	260000	4945000
Florida.....	54477	80000	..	..	8000	..	..	733000
Wisconsin territory.....	30945	100000	971000	20000	1200000	5000	25000	672000
Iowa.....	43112	115000	793000	25000	681000	8000	14000	2028000
Dist. of Columbia.....	43712	54000	15000	..	12000	7000	..	35000
Texas.....	..	100000	..	..	..	..	..	..
Total.....	17068453	19602500	106548000	5160600	163206000	27175000	10268000	417899000

State or Territory.	No. bushels potatoes.	No. tons of hay.	Tons flax and hemp.	No. lbs. of tobacco.	No. lbs. of cotton.	No. lbs. of rice.	Lbs. of silk cocoon.	No. lbs. of sugar.
Maine.....	8613000	1877000	..	..	..	..	944	300000
New-Hampshire.....	3714000	526000	..	..	..	..	1210	2200000
Massachusetts.....	3038000	530000	..	123000	..	..	47110	500000
Rhode Island.....	650000	46000	..	..	..	..	1250	..
Connecticut.....	1694000	458000	..	794000	..	..	220000	50000
Vermont.....	4926000	1139000	..	..	..	..	13740	1000000
New-York.....	21986000	3703000	..	..	..	..	7850	14500000
New-Jersey.....	1757000	282000	..	..	..	..	6240	..
Pennsylvania.....	5497000	1527000	..	535000	..	..	41370	1600000
Delaware.....	155000	19000	..	..	..	..	5500	..
Maryland.....	705000	56000	..	17920000	6000	..	10240	..
Virginia.....	1899000	296000	..	30218000	2412000	2500	9260	1700000
North Carolina.....	2711000	67000	..	10373000	4000000	3000000	8550	9000
South Carolina.....	2520000	16000	..	40000	4500000	66500000	7620	30000
Georgia.....	1536000	13000	..	195000	20500000	14500000	8430	350000
Alabama.....	1635000	15000	..	341000	11500000	280000	7690	12000
Mississippi.....	3040000	1000	..	193600	235000000	975000	300	..
Louisiana.....	1299000	26000	..	..	185000000	3800000	1570	17500000
Tennessee.....	2256000	42000	1500	37109000	48000000	9000	30110	520000
Kentucky.....	1508000	123000	22560	63310000	1200000	17000	6970	2100000
Ohio.....	4120000	1251000	500	7576000	..	..	39370	3000000
Indiana.....	2680000	1351000	500	3520000	..	..	1150	8000000
Illinois.....	2631000	297000	500	1168000	270000	..	4680	600000
Missouri.....	875000	77000	12500	13744000	200000	..	290	450000
Arkansas.....	642000	1000	..	..	17000000	6500	300	5000
Michigan.....	4555000	214000	..	..	..	..	1900	3000000
Florida.....	255000	1000	..	260000	12000000	675000	590	750000
Wisconsin territory.....	938000	84000	..	..	..	..	40	300000
Iowa territory.....	516000	26000	..	..	..	..	..	150000
District of Columbia.....	41000	1000	..	..	..	..	1500	..
Total.....	88392000	14065000	37500	187422000	936088000	89765000	486530	226026000

* For 1850, see vol. I.

INCREASE OF POPULATION IN THE UNITED STATES, COMPARED WITH THE GROWTH, CONSUMPTION, AND EXPORT OF WHEAT, FROM 1790 TO 1840.

Years	Population of the U. States.	Pop. of Atlantic cities—Boston, N. York, Philadelphia, Baltimore, Charleston, N. Orleans	Pop. of inland cities—Alb., Buf., Cleveland, Detroit, Pittsburg, Cincinnati, Louisville, St. Louis	Acres of land under cultivation in wheat	Estimated product of average crop. Bushels of 60 lbs.	Bushels used for seed, starch, and animal food	Bushels wheat exported to foreign countries in flour and grain	Bushels consumed for human food	Proportion of crop exported.—Per cent	Aver. price per bushel in Philadelphia in each period of ten years.	Average price pr. qr. of 8 bush. in Gt. Britain in do.
1790	3929328	130051	3500	1000000	17000000	1550000	4750000	10700000	28		47s 6d
1800	5309758	210539	9500	1300000	22000000	2100000	3300000	16600000	15	\$1.62	62s 7d
1810	7239903	314795	25700	1750000	30000000	2800000	4320000	22800000	14½	1.58	82s 3d
1820	9638166	400023	33000	2600000	38000000	4150000	5960000	27950000	15½	1.85	86s 0d
1830	12866020	589434	82344	3000000	50000000	4800000	6175000	39125000	12½	1.05	58s 7d
1840	17068666	871621	169239	4700000	80000000	7750000	11300000	60950000	14	1.29	56s 11d

TABULAR STATEMENT OF MANUFACTURES IN THE WEST IN 1840.

States and Territories	Machinery.		Hardware.		Fire-arms, &c.			Precious Metals.	
	Value Dols.	Men em- ployed No.	Value of Cutlery, &c. Dols.	Men em- ployed No.	Can- non No.	Small Arms No.	Men em- ployed No.	Value Dols.	Men em- ployed No
Alabama	131,825.	96	13,875.	41	4	428	20	1,650.	
Mississippi	242,225.	274				90	7	6,425.	3
Louisiana	5,000		30,000	8					
Tennessee	257,704	266	57,170	142		564	34	28,460	11
Kentucky	46,074	149	22,350	30		2,341	109	19,060	21
Ohio	875,731	858	393,300	289	3	2,450	70	53,125	37
Indiana	123,808	120	34,263	83		885	47	3,500	2
Illinois	37,720	71	9,750	20	20	238	12	2,400	7
Missouri	190,412	191				959	48	5,450	12
Arkansas	14,065	51				6	1		
Michigan	47,000	67	1,250	7		195	6	5,000	1
Florida	5,000	8						500	
Wisconsin	716	6				12	1		
Iowa						40	2		

States and Territories	Various Metals.		Granite, &c.		Bricks & Lime.		Capital invested in those already mentioned.		Wool.	
	Value. doll's.	Men em- ployed No.	Value. doll's.	Men em- ployed No.	Value. doll's.	Men em- ployed No.	doll's.		Full- ing Mills. No.	Facto- ries. No.
Alabama	25,700	17	7,311	17	91,326	264	95,370			
Mississippi	36,900	20			273,870	693	222,745			
Louisiana					861,655	1,467	2,432,600			
Tennessee	100,870	100	5,400	10	119,371	417	166,728		4	26
Kentucky	164,080	174	8,820	25	240,919	657	148,191		5	40
Ohio	782,901	589	256,131	401	712,697	1,469	677,056		206	130
Indiana	14,580	26	6,720	28	206,751	1,007	140,469		24	37
Illinois	31,200	29	16,112	26	263,398	975	104,648		4	16
Missouri	60,300	72	32,050	73	185,234	671	256,484			9
Arkansas	1,210	5	50		319,696	66	11,020			1
Michigan	57,900	45	7,000	6	68,913	298	77,075		16	4
Florida	4,000	3			37,600	136	90,900			
Wisconsin	3,500	5			6,527	43	4,355			
Iowa					13,710	39	8,200			

States and Territories	Wool.			Cotton.					
	Value of Goods. doll's.	Persons em- ployed. No.	Capital in- vested. doll's.	Facto- ries. No.	Spin- dles. No.	Dye and Print Works. No.	Value of articles. doll's.	Persons em- ployed. No.	Capital in- vested. doll's.
Alabama				14	1,502		17,547	82	35,575
Mississippi				53	318		1,744	81	6,420
Louisiana				2	706		18,900	23	22,000
Tennessee	14,290	45	25,600	38	16,813		325,719	1,542	463,240
Kentucky	151,246	200	138,000	58	12,358	5	329,380	523	316,113
Ohio	685,757	935	537,985	8	13,574		139,378	246	113,500
Indiana	58,867	103	77,954	12	4,955	1	135,400	210	142,50

TABULAR STATEMENT OF MANUFACTURES IN THE WEST IN 1840—continued.

States and Territories.	Wool.			Cotton.					Capital invested.
	Value of Goods. doll's.	Persons employed. No.	Capital invested. doll's.	Factories. No.	Spindles. No.	Dye and Print Works. No.	Value of articles. doll's.	Persons employed. No.	
Illinois.....	9,540.	34	26,205.						
Missouri.....	17,750.	13	5,100.						
Arkansas.....	129.	1	12,600.	2	90			7	2,125
Michigan.....	9,734.	37	34,120.						
Florida.....									
Wisconsin.....									
Iowa.....	800.								

States and Territories.	Silk.			Flax.			Capital invested.	Value produced. doll's.
	Reeled & other sorts. lbs.	Value. doll's.	Persons employed. No.	Value. doll's.	Persons employed. No.	Capital invested. doll's.		
Alabama.....	13	99				75		705
Mississippi.....								
Louisiana.....	70	420						
Tennessee.....	10½	218	14	31	2,500	3,139	142	9,542
Kentucky.....	86	819	3	11	5,467	7,519	249	127,875
Ohio.....	652	3,740	23	27	2,290	11,737	31	280,293
Indiana.....	9	94	4	1	3	6,851	261	46,329
Illinois.....	17	235		1	10	1,480	50	11,711
Missouri.....								11,115
Arkansas.....								585
Michigan.....	8	34	2		50	30		
Florida.....	1½	15						
Wisconsin.....	1	5		1				1,500
Iowa.....								

States and Territories.	Mixed.		Tobacco.		Hats, Caps, Bonnets, &c.			
	Persons employed. No.	Capital invested. doll's.	Articles. Value. doll's.	Persons employed. No.	Capital invested. doll's.	Hats and Caps, &c. doll's.	Straw Bonnets. doll's.	Persons employed. No.
Alabama.....			2,250.	2		8,210.		31
Mississippi.....			10.			5,140.		13
Louisiana.....			150,000.	414	95,000.			
Tennessee.....	24	537	89,462.	259	247,475.	104,949.		177
Kentucky.....	3,142	30,903	413,585.	587	230,400.	201,310.	4,483.	194
Ohio.....	552	183,415	212,818.	187	68,810.	728,513.	3,028.	963
Indiana.....	596	13,145	65,659.	88	24,706.	122,844.	2,048.	183
Illinois.....	49	8,233	10,139.	24	3,093.	28,395.	1,570.	68
Missouri.....	40	4,885	89,996.	188	51,755.	111,620.	100	22
Arkansas.....			750.	3	250	1,500.		3
Michigan.....			5,000.	12	1,750.	30,463.	659.	42
Florida.....			10,480.	21	5,240.	1,500.		
Wisconsin.....	4	550.				61		1
Iowa.....			40.	2		19,900.	5,100.	

States and Territories.	Leather Tanneries.		Saddleries, &c.		Capital invested.		Articles Value.		Capital invested.	
	Tan-neries. No.	Sole tanned. sides.	Upper tanned. sides.	Men employed. No.	Capital invested. doll's.	All other Fac-tories. No.	Articles Value doll's.	Capital invested. doll's.		
Alabama.....	142	36,705	42,777	300	147,463	137	180,152	58,332		
Mississippi.....	128	15,332	15,093	149	70,870	42	118,167	41,945		
Louisiana.....	25	12,760	12,705	88	132,025	7	108,500	89,550		
Tennessee.....	454	133,547	171,329	909	484,114	374	359,050	154,540		
Kentucky.....	387	107,676	155,465	978	567,954	548	732,646	369,635		
Ohio.....	812	161,630	234,037	1,790	957,383	1,160	1,986,146	917,245		
Indiana.....	428	122,780	157,581	978	399,627	579	730,001	247,549		
Illinois.....	155	28,383	34,654	305	155,679	626	247,217	98,503		
Missouri.....	157	31,959	55,186	235	208,936	340	298,345	179,527		
Arkansas.....	37	9,263	9,811	70	43,510	545	17,400	8,830		
Michigan.....	38	7,017	9,832	99	70,240	101	192,190	69,202		
Florida.....	3	5,250	1,250	15	14,500	10	6,200	4,250		
Wisconsin.....	1	150	150	3	2,000	13	11,800	7,002		
Iowa.....	3	340	410	4	4,400	5	4,875	1,645		

TABULAR STATEMENT OF MANUFACTURES IN THE WEST IN 1840—continued.

States and Territories.	Soap and Candles.					Dis. and Fer. Liquors.		
	Soap. lbs.	Tallow candles. lbs.	Sperma- cet and wax candles. lbs.	Men em- ployed. No.	Capital in- vested. doll's.	Distil- leries. No.	Pro- duced. gals.	Brew- eries. No.
Alabama.....	219,024	23,047	621	2	3,500	188	127,230	7
Mississippi.....	312,084	31,957	97			14	3,150	2
Louisiana.....	2,202,200	3,500,030	40,000	75	115,500	5	285,520	1
Tennessee.....	594,289	65,388		2	6,000	1,426	1,109,107	6
Kentucky.....	2,282,426	563,635		516	28,765	889	1,763,685	50
Ohio.....	3,603,036	2,318,456	151	105	186,780	390	6,329,467	59
Indiana.....	1,135,560	228,938	111	30	13,039	323	1,787,108	20
Illinois.....	519,673	117,698	42	25	17,345	150	1,551,684	11
Missouri.....	138,000	243,000		15	16,700	293	508,368	7
Arkansas.....	142,775	16,541	632	32	200	53	26,415	
Michigan.....	78,100	57,975		6	6,000	34	337,761	10
Florida.....	10,887	2,812	168					
Wisconsin.....	64,317	12,909	48	5	3,432	3	8,300	3
Iowa.....	9,740	4,436	282	1		2	4,310	

Glass, Earthenware, &c.

States and Territories.	Dis. and Fer. Liquors.					Value of articles including mirrors.			
	Pro- duced. gals.	Men em- ployed. No.	Capital in- vested. doll's.	Glass- houses. No.	Cutting- shops. No.	Men em- ployed. No.	Capital in- vested. doll's.	Potte- ries. No.	Value of articles. doll's.
Alabama.....	200	220	34,212					7	8,300
Mississippi.....	152	12	910					1	1,200
Louisiana.....	2,400	27	110,000					1	1,000
Tennessee.....	1,835	1,341	218,182					29	51,600
Kentucky.....	214,589	1,092	315,308		1	2	3,000	16	24,090
Ohio.....	1,422,584	788	893,119					99	89,754
Indiana.....	188,392	500	292,316					45	35,835
Illinois.....	90,300	233	138,155					23	26,740
Missouri.....	374,700	365	189,976					12	12,175
Arkansas.....		38	10,205						
Michigan.....	308,696	116	124,200	1		34	7,322	3	1,100
Florida.....									
Wisconsin.....	14,200	11	14,400						
Iowa.....		3	1,500					4	1,050

Glass, &c.

Sugar Refineries, Chocolate, &c.

States and Territories.	Men em- ployed. No.		Capital in- vested. doll's.	Refine- ries. No.	Value pro- duced. doll's.	Value of Choco- late. doll's.	Value of Confec- tionary. doll's.	Men em- ployed. No.	Capital in- vested. doll's.
Alabama.....	13	11,250					13,800	15	6,120
Mississippi.....	2	200					10,500	2	
Louisiana.....	18	3,000		5	770,000	7,000	20,000	101	351,000
Tennessee.....	50	7,300							
Kentucky.....	51	9,670					36,050	28	14,250
Ohio.....	119	43,450		1	3,000		60,450	43	26,800
Indiana.....	79	13,685					4,000	3	1,000
Illinois.....	56	10,225					2,240	3	825
Missouri.....	33	7,250					1,000	1	500
Arkansas.....									
Michigan.....	4	625					3,000	3	1,200
Florida.....									
Wisconsin.....									
Iowa.....	7	350							

Drugs, Medicines, Paints and Dyes.

States and Territories.	Powder Mills.			Men em- ployed. No.	Capital invested. Dols.	Value of Medicinal Drugs, Paints, Dyes, &c. Dols.		Value of Turpentine, and Varnish. Dols.		Men em- ployed. No.	Capital invested. Dols.
	Powder Mills. No.	Powder. lbs.									
Alabama.....						16,600				4	16,000
Mississippi.....						3,125				4	500
Louisiana.....						42,000				10	6,000
Tennessee.....	10	10,323		11	1,490	3,337	1,485			15	3,360
Kentucky.....	11	182,500		58	42,000	26,994	2,000			25	16,630
Ohio.....	2	222,500		13	18,000	101,880	200			70	126,335

TABULAR STATEMENT OF MANUFACTURES IN THE WEST IN 1840—continued.

Drugs, Medicines, Paints and Dyes.

States and Territories.	Powder Mills.				Value of Medicinal Drugs, Paints, Dyes, &c.				Value of Turpentine, and Varnish.		Men employed.	Capital invested.
	Powder Mds. No.	Powder. lbs.	Men employed. No.	Capital invested. Dols.	Dols.	Dols.	Dols.	Dols.	Dols.	Dols.		
Indiana	1		1		47,720		26				20	17,984
Illinois					19,001		5,000				20	13,350
Missouri	1	7,500	2	1,050	13,500						8	7,000
Arkansas	1	400		700	400							
Michigan					1,580						3	650
Florida					200						1	500
Wisconsin					250							
Iowa					2,340						7	

Paper.

State and Territories.	Cordage.				Factories.	Value of all other fabrics of Paper, &c.				Men employed.	Capital invested.
	Rope Walks. No.	Value produced. Dols.	Men employed. No.	Capital invested. Dols.		Value produced. Dols.	Dols.	Dols.	Dols.		
Alabama											
Mississippi											
Louisiana											
Tennessee	28	132,630	258	84,230	5	46,000		14,000		87	93,000
Kentucky	111	1,292,276	1,888	1,023,130	7	44,000				47	47,500
Ohio	21	89,750	66	37,675	14	270,202		80,000		305	208,200
Indiana	5	5,850	11	2,270	3	86,457		54,000		100	68,739
Illinois					1	2,000					
Missouri	21	98,490	139	71,589							
Arkansas											
Michigan					1	7,000				6	20,000
Florida											
Wisconsin											
Iowa											

Printing and Binding.

States and Territories	Printing Offices No.	Bind-eries No.	Daily Papers No.	Weekly Papers No.	Semi and Tri-weekly Papers		Periodicals No.	Men employed.	Capital invested.
					No.	No.			
Alabama	22	1	3	24	1			105	98,100
Mississippi	28	1	2	28	1			54	83,516
Louisiana	35	5	11	21	2	3		392	193,700
Tennessee	41	5	2	38	6	10		191	112,500
Kentucky	34	3	5	26	7	8		226	86,325
Ohio	159	41	9	107	7	20		1,175	446,720
Indiana	69	6		69	4	3		211	58,505
Illinois	45	5	3	38	2	9		175	71,300
Missouri	40		6	24	5			143	79,350
Arkansas	9	1		6	3			37	13,100
Michigan	28	2	6	26		1		119	62,900
Florida	10	1		10				39	35,206
Wisconsin	6			6				24	10,300
Iowa	4			4				15	5,700

Carriages and Wagons.

Mills and the Articles Produced.

States and Territories	Value produced. Dols.	Men employed. No.	Capital invested. Dols.	Flour-ing Mills No.	Flour produced Bbls.	Grist Mills No.	Saw Mills No.	Oil Mills No.	Articles		Men employed.
									Value Dols.		
Alabama	88,691	235	49,074	51	23,684	797	524	16	1,225,425		1,386
Mississippi	49,693	132	34,345	16	1,809	806	309	28	486,864		923
Louisiana	23,350	51	15,780	3		276	139	50	706,785		972
Tennessee	219,897	518	80,878	255	67,881	1,565	977	26	1,020,664		2,100
Kentucky	168,724	533	79,378	258	273,088	1,515	718	23	2,437,937		2,067
Ohio	701,228	1,490	290,540	536	1,311,954	1,325	2,683	112	8,868,213		4,661
Indiana	163,135	481	78,116	204	224,624	646	1,248	54	2,329,134		2,224
Illinois	144,362	307	59,263	98	172,657	640	785	18	2,417,826		2,204
Missouri	97,112	201	45,074	64	49,363	636	393	9	960,058		1,326
Arkansas	2,675	75	1,555	10	1,430	292	88	1	330,847		400
Michigan	20,075	59	13,150	93	202,680	97	491		1,832,363		1,144
Florida	11,000	15	5,900			62	65	2	189,650		410
Wisconsin	2,600	8	325	4	900	29	124		350,003		850
Iowa	1,200	3	1,490	6	4,340	37	75		95,425		154

TABULAR STATEMENT OF MANUFACTURES IN THE WEST IN 1840—continued.

States and Territories.	Mills, &c.		Ships, &c.		Household Furniture.			Houses.	
	Capital invested Dols.	Value of ships and Vessels built Dols.	Value of Furniture Dols.	Men employed No.	Capital invested Dols.	Brick & Stone Houses built No.	Wooden Houses built No.		
Alabama	1,113,107		41,671	53	18,430	67	472		
Mississippi	1,219,815	13,925	34,450	41	28,610	144	2,247		
Louisiana	1,870,795	80,500	2,300	129	576,050	248	619		
Tennessee	1,310,195	229	79,580	203	30,650	193	1,095		
Kentucky	1,650,689		273,350	453	139,295	485	1,757		
Ohio	4,931,021	522,855	761,146	1,928	534,317	970	2,764		
Indiana	2,077,018	107,223	211,481	564	91,022	346	4,270		
Illinois	2,147,618	39,200	84,410	244	62,223	334	4,133		
Missouri	1,266,019					413	2,202		
Arkansas	288,257	500	20,293	45	7,810	21	1,083		
Michigan	2,460,200	10,500	23,944	65	28,050	39	1,280		
Florida	488,950	14,100		36	18,300	9	306		
Wisconsin	561,650	7,159	6,945	29	5,740	7	509		
Iowa	166,650		4,600	12	1,350	14	483		

Musical Instruments.					All other Manufactures.			
States and Territories	Houses.		Value of Musical Instruments produced		Capital invested Dols.	Value of all other Manufactures not enumerated Dols.	Capital invested Dols.	Total Capital invested in Manufactures Dols.
	Men employed No.	Cost of construction Dols.	Value of Musical Instruments produced Dols.	Men employed No.				
Alabama	882	739,871	21			424,943	139,411	2,130,064
Mississippi	2,487	1,175,513				144,347	79,727	1,797,727
Louisiana	1,484	2,736,944				5,000	417,699	6,430,699
Tennessee	1,467	427,402				490,671	189,846	3,731,580
Kentucky	2,883	1,039,172	4,500	6	5,000	697,029	551,762	5,945,259
Ohio	6,660	3,776,823	8,454	11	5,000	1,549,592	5,329,734	16,905,257
Indiana	5,519	1,241,312				684,771	303,278	4,132,043
Illinois	5,737	2,065,255				427,460	206,919	3,136,512
Missouri	1,966	1,441,573	500	2	50	230,083	282,965	2,704,405
Arkansas	1,251	1,141,174				27,386	23,905	424,467
Michigan	1,978	571,005				132,870	97,821	3,112,240
Florida	689	327,913				37,280	5,000	669,490
Wisconsin	644	212,085				51,612	26,162	635,926
Iowa	321	135,987				34,445	8,450	199,645

The following deeply interesting pages we have taken the liberty of extracting from the late valuable report made by McGregor to Parliament upon the United States.

From a series of articles on the internal trade of the United States, written by Mr. Scott, of Ohio, in which, although he reasons frequently on the most fallacious principles, he conveys much information, and some curious and not improbable computations, we extract the following passages:—

“In the states of Massachusetts, New-York, Pennsylvania, and Ohio, the improvements of the age operated to some extent on their leading towns from 1830 to 1840. Massachusetts had little benefit from canals, railways, or steam power; but her towns felt the beneficent influence of her labor-saving machinery moved by water power, and her improved agriculture and common roads. The increase of her nine principal towns, commencing with Boston and ending with Cambridge, from 1830 to 1840, was 66,373, equal to fifty-three per cent; being more than half the entire increase of the state, which was but 128,000, or less than twenty-one per cent. The increase, leaving

out those towns, was but eleven per cent. Of this eleven per cent., great part, if not all, must have been in the towns not included in our list.

“The growth of the towns in the State of New-York, during the same period, is mainly due to her canals. That of the fourteen largest, from New-York to Seneca, inclusive, was 204,507, or sixty-four and a half per cent.; whereas the increase in the whole state was less than twenty-seven per cent., and of the state, exclusive of these towns, but nineteen per cent. Of this, it is certain that nearly all is due to all the other towns not in the list of the fourteen largest.

“Pennsylvania has canals, railways, and other improvements, that should give a rapid growth to her towns. These works, however, had not time, after their completion, to produce their proper effects, before the crash of their monetary system nearly paralyzed every branch of her industry, except agriculture and the coal business. Nine of her largest towns, from Philadelphia to Erie, inclusive, exhibit a gain from 1830 to 1840, of 84,642, being at the rate of thirty-nine and one-third per cent. This list does not include Pottsville, or any other mining town. The increase of the whole

state was but twenty-one and three quarters per cent.

"Ohio has great natural facilities for trade, in her lake and river coast; the former having become available only since the opening of the Erie canal, in 1826, and that to little purpose before 1830. She has also canals, which have been constructing and coming gradually into use since 1830. These now amount to about 760 miles. For the last five years, she has also constructed an extent of M'Adam roads exceeding any other state, and amounting to hundreds of miles. Her railways, which are of small extent, have not been in operation long enough to have produced much effect. From this review of the state, it will not be expected to exhibit as great an increase in town population, from 1830 to 1840, as will distinguish it hereafter. The effects of her public improvements, however, will be clearly seen in the following exhibit. Eighteen of her largest towns, and the same number of medium size and average increase, contained, in 1830, 58,310, which had augmented in 1840, to 138,916; showing an increase of 138 per cent. The increase of the whole state, during the same period, was sixty-two per cent. The northwest quarter of the state has no towns of any magnitude, and has but begun to be settled. This quarter had but 12,671 inhabitants in 1830, and 92,050, in 1840.

"The increase of the twenty largest towns of the United States, from New-York to St. Louis inclusive, from 1830 to 1840, was fifty-five per cent., while that of the whole country was less than thirty-four per cent. If the slave-holding states were left cut, the result of the calculation would be still more favorable to the towns.

"The foregoing facts clearly show the strong tendency of modern improvements to build towns. Our country has just begun its career; but as its progress in population is in a geometrical ratio, and its improvements more rapidly progressive than its population, we are startled at the results to which we are brought, by the application of these principles to the century into which our inquiry now leads us.

"In 1840, the United States had a population of 17,068,666. Allowing its future increase to be at the rate of thirty-three and one-third per cent. for each succeeding period of ten years, we shall number in 1940, 303,101,641. Past experience warrants us to expect this great increase. In 1790, our number was 3,927,827. Supposing it to have increased each decade in the ratio of thirty-three and one-third per cent., it would, in 1840, have amounted to 16,560,256; being more than 500,000 less than our actual number as shown by the census. With 300,000, we should have less than 150 to the

square mile for our whole territory, and but 220 to the square mile for our organized states and territories. England has 300 to the square mile. It does not then seem probable that our progressive increase will be materially checked within the hundred years under consideration. At the end of that period, Canada will probably number at least 20,000,000. If we suppose the portion of our country, east and south of the Apalachian chain of mountains, known as the Atlantic slope, to possess at that time 40,000,000, or near five times its present number, there will be left 260,000,000 for the great central region between the Appalachian and Rocky mountains, and between the Gulf of Mexico and Canada, and for the country west of the Rocky mountains. Allowing the Oregon territory 10,000,000, there will be left 250,000,000 for that portion of the American states lying in the basins of the Mobile, Mississippi, and Lawrence. If, to these, we add 20,000,000 for Canada, we have 270,000,000 as the probable number that will inhabit the North American valley at the end of the one hundred years commencing in 1840. If we suppose one-third, or 90,000,000 of this number to reside in the country as cultivators and artisans, there will be 180,000,000 left for the towns—enough to people 360, each containing 500,000. This does not seem so incredible as that the valley of the Nile, scarcely twelve miles broad, should have once, as historians tell us, contained 20,000 cities.

"But, lest one hundred years seem too long to be relied on, in a calculation having so many elements, let us see how matters will stand fifty years from 1840, or forty-seven years from this time. The ratio of increase we have adopted cannot be objected to as extravagant for this period. In 1890, according to that ratio, our number will be 72,000,000. Of these, 22,000,000 will be a fair allowance for the Atlantic slope, Of the remaining 50,000,000, 2,000,000 may reside west of the Rocky mountains, leaving 48,000,000 for the great valley within the states. If to those we add 5,000,000 as the population of Canada, we have an aggregate of 53,000,000 for the North American valley. One-third, or say 18,000,000, being set down as farming laborers and rural artisans, there will remain 35,000,000 for the towns, which might be seventy in number, having each 500,000 souls. It can scarcely be doubted that, within the forty-seven years, our agriculture will be so improved, as to require less than one-third to furnish food and raw materials for manufacture for the whole population. Good judges have said that we are not now more than twenty or thirty years behind England in our husbandry. It is certain that we are rapidly adopting her improvements in this branch of industry;

and it is not to be doubted that very many new improvements will be brought out, both in Europe and America, which will tend to lessen the labor necessary in the production of food and raw materials.

"The tendency to bring to reside in towns all not engaged in agriculture that machinery and improved ways of intercourse have created, has already been illustrated by the example of England and some of our older states. Up to this time our North American valley has exhibited few striking evidences of this tendency. Its population is about 10,500,000; but, with the exception of New-Orleans, Cincinnati, and Montreal, it has no large towns. In Ohio, the oldest (not in time but in maturity) of our western states, the arts of manufactures have commenced their appropriate business of building towns. Cincinnati, with its suburbs, has (1840) upwards of 50,000 inhabitants; a larger proportion of whom are engaged in manufactures and trades, than of either of the sixteen principal towns of the Union, except Lowell. The average proportion so engaged in all these towns, is 1 to 8.79. In Cincinnati, it is 1 to 4.50. Indeed, our interior capital has but two towns (New-York and Philadelphia) before her, in number of persons engaged in manufactures and trades. Our smaller towns, Dayton, Zanesville, Columbus and Steubenville, having each about 6,000 inhabitants, have nearly an equal proportion engaged in the same occupation.

"These examples are valuable only as indicating the direction to which the industry of our people tends, in those portions of the West, where population has attained a considerable degree of density. Of the 10,500,000 now inhabiting this valley, little more than 500,000 live in towns; leaving about 10,000,000 employed in making farms out of the wilds, and producing human food and materials for manufactures. Even since the late period when these remarks were written, many of the interior towns have greatly increased in population.

"When, in 1890, our number reaches 53,000,000, according to our estimate, there will be but one-third of this number (to wit, 18,000,000) employed in agriculture and rural trades. Of the increase up to that time (being 42,500,000,) 8,000,000 will go into rural occupations, and 34,500,000 into towns. This would people sixty-nine towns, with each 500,000.

"Should we, yielding to the opinion of those who may believe that more than one-third of our people will be required for agriculture and rural trades, make the estimate on the supposition that one-half the population of our valley, forty-seven years hereafter, will live on farms and in villages below the rank of towns, the account will stand thus: 26,500,000 (being the one-half

of 53,000,000 in the valley) will be the amount of the rural population; so that it must receive 16,500,000 in addition to the 10,000,000 it now has. The towns in the same time, will have an increase of 26,000,000, in addition to the 500,000 now in them. Where will these towns be, and in what proportions will they possess the 26,500,000 inhabitants?

"One of them will be either St. Louis or Alton; everybody will be ready to admit that. Still more beyond reach of doubt or cavil, is Cincinnati. We might name also Pittsburg and Louisville; but we trust that our readers, who have followed us through our former articles, are ready to concur in the opinion that the greatest city of the Mississippi basin will be either Cincinnati or the town near the mouth of the Missouri, be it Alton or St. Louis. Within our period of forty-seven years, we have no doubt it will be Cincinnati. She is now in the midst of a population so great and so thriving: and, on the completion of the Miami canal, which will be within two years, she will so monopolize the exchange commerce at that end of the canal between the river and lake regions, that it is not reasonable to expect she can be overtaken by her western rival for half a century.

"But such has been the influx of settlers within the last few years to the lake region, and so decided has become the tendency of the productions of the upper and middle regions of the great valley to seek a market at and through the lakes, that we can no longer withstand the conviction that, even within the short period of forty-seven years, a town will grow up on the lake border, greater than Cincinnati. The staple exports, wheat and flour, have for years so notoriously found their best markets at the lake towns, that every cultivator, who reasons at all, has come to know the advantage of having his farm as near as possible to lake navigations. This has, for some years past, brought immigrants to the lake country from the river region of these states, and from the states of Pennsylvania, Maryland and Virginia, which formerly sent their immigrants mostly to the river borders. The river region, too, not being able to compete with its northern neighbor in the production of wheat, and being well adapted to the growth of stock, has of late gone more into this department of husbandry. This business, in some portions, almost brings the inhabitants to a purely pastoral state of society, in which large bodies of land are of necessity used by a small number of inhabitants. These causes are obviously calculated to give a dense population to the lake country, and a comparatively sparse settlement to the river country. There are other causes not so obvious, but not less potent or en-

during. Of these, the superior accessibility of the lake country from the great northern hives of emigration, New-England and New-York, is first deserving attention. By means of the Erie canal to Oswego and Buffalo, and the railway from Boston to Buffalo, with its radiating branches, these states are brought within a few hours' ride of our great central lake, and at an expense of time and money so small as to offer but slight impediment to the removal of home and household goods. The lakes, too, are about being traversed by a class of vessels, to be propelled by steam and wind, called Ericson propellers, which will carry emigrants with certainty and safety, and at greatly reduced expenses.

"European emigration hither, which first was counted by its annual thousands, then by its tens of thousands, has at length swelled to its hundred thousands, in the ports of New-York and Quebec. These are both but appropriate doors to the lake country. It is clear, then, that the lake portion will be more populous than the river division of the great valley."

These and the following remarks must be considered as speculative—some scarcely probable, though none are impossible.

"It has been proved that an extensive and increasing portion of the river region seeks an outlet for its surplus productions through the lakes. In addition to the proof given on that subject, we will compare the exports, in breadstuffs and provisions, of New-Orleans and Cleveland—the former for the year beginning the 1st of September, 1841, and ending the 31st August, 1842; and the latter for the season of canal navigation in 1842. All the receipts of Cleveland, by canal, are estimated as exports; as there is no doubt that she receives coastwise and by wagon, more than enough to feed her people. The exports from New-Orleans of the enumerated articles, and their price, are as stated in previous Nos. of this magazine. Of the articles, then, of flour, pork, bacon, lard, beef, whisky, corn, and wheat—

New-Orleans exported to the value of . . .	\$4,446,989
Cleveland " " " " " " " " " " " "	4,431,739

"The other articles of breadstuffs and provisions received at New-Orleans during that year, from the interior, are of small amount, and obviously not sufficient for the consumption of the city. Not so with Cleveland. The other articles of grain and provision shipped last year from this port, added to the above, will throw the balance decidedly in her favor. If we suppose, what cannot but be true, that all the other ports of the upper lakes sent eastward as much as Cleveland, we shall have the startling fact, that this lake country, but yesterday brought under our notice, already sends abroad more than twice the amount of human food that is

shipped from the great exporting city of New-Orleans, the once-vaunted sole outlet of the Mississippi valley.

"Two short canals, one of about 100 miles, connecting the Illinois canal with the Mississippi, at or near the mouth of Rock river; and the other of about 175 miles, connecting the southern termination of the Wabash and Erie canal, at Terre Haute, with the Mississippi, at Alton—would, with the canals already finished, or in progress, secure to the lakes not less, probably, than three-fourths of all the external trade of the river valley. With the Wabash and Erie, and the Miami canals brought fairly into operation, the lakes will make a heavy draft on the trade of the river valley; and every canal, and rail-road, and good highway, carried from the lakes, or lake improvements, into that valley will add to the draft. The lake towns will then not only have a denser population in the region immediately about them, and monopolize all the trade of that region, but they will have at least half the trade of the river region. They will be nearer and more accessible to the great marts of trade and commerce of the old states and the old world; and this advantage will be growing, in consequence of the progressive removal of impediments to navigation between the lakes and the ocean.

"Long within the period under consideration, the position of Cleveland will be much more favorable for concentrating the business of the surrounding country than that of Buffalo. *Canada will, before that time, form a part of our commercial community, whether she be associated with us in the government or not. She will then have about 5,000,000 of people. The American shores of the lakes lying above the latitude of Cleveland will be still more populous.*

"Cleveland is the lake port for the great manufacturing hive at the head of the Ohio river, so made by the Mahoning canal, which connects her with Pittsburgh. She commands, and she will long command, by means of her 500 miles of canal and slack-water navigation, the trade of a part of western Pennsylvania, most of western Virginia, and nearly all of the east half of the state of Ohio, in the intercourse of their inhabitants with the lake coasts, the eastern states, Canada, and Europe. Her position is handsome, and although her water-power is small, the low price of coal will enable her to sustain herself as a respectable manufacturing town. Her harbor, like that of Buffalo, though easy of entrance, is not sufficiently capacious. If coal should not be found on Lake Huron, more accessible to navigation than the beds on the canal south of Cleveland, this article will greatly increase her trade with the other lake ports. It is now sold on her wharves at eight cents per bushel.

"A glance at the map of the country will suffice to show that Buffalo is not well situated to be a place for the exchange of agricultural productions of the cold regions for those of the warm regions of the valley. In that respect, Cleveland, though not unrivaled, is clearly in a better position than Buffalo. As a point for exchanging the products of the field for manufactured goods, Buffalo will not probably for any long time, have the advantage of Cleveland. Such traders as live within the influence of the canals and rivers that pour their surplus products into Cleveland, and stop short of New-York and Boston, will, it seems to us, be more likely to purchase in Cleveland than in Buffalo. Not every man who supplies a neighborhood with store-goods relishes a voyage on the sometimes tempest-tossed waters of the lake; and, as we before remarked, Buffalo now being but a few hours' ride from New-York or Boston, by a pleasant and safe conveyance, will hardly stop many purchasers of goods from those great markets. On the completion of the Canadian canals, Cleveland will have the advantage of Buffalo in foreign trade, for the following reasons:—Her articles of export will be cheaper; and, by that time, as we believe, more abundant. By means of her canals and roads, Cleveland is a primary gathering-point of these articles. Not so Buffalo. To arrive at her store-houses, these products must be shipped from the store-houses of other ports up the lakes, where they must be presumed to bear nearly the same price as at Cleveland. The cost of this shipment, together with a profit on it, will then be added, and by so much, enhance their price in Buffalo.

"It is probable that within the period under consideration, Cleveland will have successful rivals in Maumee, Detroit, or Chicago.

"We dare say that when the people of the city of old and renowned English York were informed, that in the wilds of America, some settlers had named their collection of rude houses New-York, they felt no other emotion than contempt, and treated the presumptuous ambition of the settlers with derision. It is probable that the inhabitants of old English Boston held in like contempt the assumption of the name of their town by those who planted the capital of New-England. Who, forty-seven years ago, would not have ridiculed the opinion, if any one had been visionary enough to express it, that, within that time, there would grow up, in the valley of the Ohio, a city containing 50,000 inhabitants; and that, within the same period, that part of the northwestern territory, now composing the state of Ohio, would contain nearly, 2,000,000 of people? We then had, as a basis of increase, but 4,000,000; whereas it is now over 18,000,000; and, including Canada, near 20,000,000.

For the past forty-seven years our growth has been from 4,000,000 to near 20,000,000. During the next forty-seven years, it will be, according to our estimate, from near 20,000,000, to 77,000,000; or, according to the more elaborate and probably more correct estimate of Professor Tucker, 55,000,000. This increase will certainly make it necessary that many towns, now small, should become great; and sensible men, when contemplating their probable destiny for half a century in advance, will look at the natural and artificial advantages of our lake towns, rather than at the few thousands, more or less, of present population. The towns under consideration are all destined to become large. The leading advantages of Cleveland have been already stated. Detroit has a pleasant site, and a noble harbor. A few M'Adam roads, leading north, northwest, and west, into the interior, would give her the direct trade of a large and fertile portion of Michigan. Until such roads, or some reasonably good substitute, are made, the railways leading north and west will, at least while they are new and in good order, make the chief gathering points of trade at their interior terminations, and at convenient points on their line. Pontiac, Ypsilanti, Ann Arbor, and other towns west, will cut off from Detroit, and centre in themselves the direct trade with the farmers, which, with good wagon-roads, without the railways, would have centred in Detroit. One train of cars will now bring to her warehouses what would have been brought to her stores by 100 wagons.

"Maumee has a harbor capacious enough to accommodate the commerce of a great city. Good harbors may be made, without a very heavy cost, at Cleveland and Chicago, either by excavating the low grounds bordering their present harbors, or by breakwaters and piers in the lakes outside. Some expenditure will also be needed to deepen the entrance into the Maumee harbor, and to remove obstructions within it. In water-power, Maumee has greatly the advantage over her rivals. Cleveland has but a small amount; whereas Maumee has it to an extent unrivaled by any towns on the lake borders above Buffalo; and it is so placed, as to possess the utmost availability. Along her harbor, for thirteen miles, the canal passes on the margin of the high bank that overlooks it. This canal—a magnificent mill-race, averaging near seven feet deep, and seventy feet wide at the water-line—is fed from the Maumee River, seventeen miles above the head of the harbor, and is carried down on the level of low water in the river above, for twenty-two miles, to a point two miles below the head of the harbor, where it stands on a table-land, sixty-three feet above the harbor. Descending, then, by a lock

seven feet, the next level is two miles long, and stands fifty-six feet above the harbor. Descending again by a lock seven feet, the level below is three miles and a half long, and stands forty-nine feet above the harbor. Again descending, within the city of Toledo, by four locks thirty-four feet, the next and last level is nearly five miles long, and stands fifteen feet above the harbor. At many points of these thirteen miles, the water may be used conveniently from the canal to the harbor; and at most of these points it may be used directly on the harbor.

"In the exchange of agricultural products of a warm and of a cold climate, Cleveland, by her canals and her connection with the Ohio, can claim south, as against the Miami canal, no farther than western Virginia and eastern Kentucky. Maumee will supply the towns on the lakes Erie, Huron, and probably Ontario, with cotton, sugar, molasses, rum, (may its quantity be small,) rice, tobacco, hemp (perhaps,) oranges, lemons, figs, and, at some future day, such naval stores as come from the pitch-pine regions of Tennessee, Mississippi, and Louisiana. Chicago will furnish a supply of the same articles to Lake Michigan, Lake Superior, when that lake becomes accessible to her navigation, and perhaps the northern portion of Lake Huron.

"Maumee will have in this trade the chief control of not less than 100,000 square miles: 12,000 in Ohio, 30,000 in Kentucky, 30,000 in Indiana, 10,000 in Illinois, 13,000 in Tennessee, 5,000 in Mississippi and Alabama, and 5,000 in Michigan; to say nothing of her claims on small portions of Missouri and Arkansas. This domain is half as large as the kingdom of France, and twice as fertile. The Miami canal, connecting Maumee with Cincinnati, will, with that part of the Wabash and Erie which forms their common trunk after their junction, be 235 miles long. The Wabash and Erie canal, from Maumee to Terre Haute, will be 300 miles long. Of this, all but thirty-six miles at its northern extremity will be in operation the present season. By means of these canals, and the rivers with which they communicate, great part of this extensive region will enjoy the advantage of a cheap water transport for its rapidly increasing surplus.

"Chicago, on the completion of the Illinois canal, may command, in its exchange of agricultural for manufactured products, an extent of territory as large as that controlled by Maumee."

We conclude the statistics which we are enabled to present at this time, of the West, with a few observations, and a table showing its approximate population in 1847, according to the estimate of Mr. Darby in a letter to the Hon. John C. Calhoun. We draw upon one of the numbers of De Bow's Review.

"The population of these vast territories was, in 1800, 482,777, having increased about one and a half per cent. per annum since 1790. In 1810 it amounted to 1,090,158, having doubled in ten years; in 1820, 2,217,464, having doubled again; in 1830, 3,672,569, or about seven to the square mile; in 1840, 5,302,918, or ten to the square mile. In these items the western portions of New-York, Pennsylvania, and Virginia, are not included. If they be added for 1840, the total western population may be set down at 7,948,789, or fourteen to the square mile. The following table, prepared by Mr. Darby for the use of government, is computed on the supposition that the decennial increase from 1830 to 1840, has since been preserved:

POPULATION OF THE GREAT CENTRAL BASIN IN 1847.

Western New-York.....	50,600
Western Pennsylvania.....	564,600
Western Virginia.....	222,300
Kentucky.....	834,970
Tennessee.....	857,590
Alabama.....	759,500
Mississippi.....	459,070
Louisiana.....	434,100
Arkansas.....	164,600
Missouri.....	529,000
Illinois.....	867,000
Indiana.....	891,566
Ohio.....	1,862,400
Michigan.....	321,000
Iowa.....	*60,000
Wisconsin.....	*50,000
Total.....	8,925,696

Being about eighteen to the square mile, or one-ninth the density of Great Britain, Portugal, Spain, and France. The whole population of the United States at the same period being computed at 21,174,557."

The following late results of investigations, &c., are furnished in the report of the St. Louis delegation, made to the Chicago Convention, said to have been prepared by Thomas Allen, of St. Louis.

We are now enabled to form a table showing the cost of river transportation in the Valley of the Mississippi:

Cost of running 1,190 steamboats.....	\$32,725,000
Insurance on \$16,188,561, at 12 per cent.....	1,942,627
Interest on \$16,188,561, at 6 per cent.....	971,313
Wear and tear of boats, 24 per cent.....	3,885,254
Tolls on the Louisville and Portland Canal.....	250,000
Cost of flatboats, (included because sacrificed at N. O.).....	1,380,000

Total cost of transportation annually..\$41,154,194

It is impossible to estimate the number of persons among whom, for wages, wood, coal, boat stores, provisions, &c., this almost incredible sum of forty-one millions of dollars is annually distributed. Suffice it to say, more or less of it reaches every family and every cabin, situated upon a double coast of

* Greatly short of the reality.

river navigation, extending over 15,000 miles; while, as a tax, it falls, not insensibly, upon every producer and consumer in the entire valley. It affects the producer, because the cost of getting his crops to market lessens the profit he is enabled to realize, and the same impediment to the returns increases the cost of the necessities he purchases for consumption. This great cost is a tax upon the surplus produce, enterprise, industry and trade of the country.

The commerce of a country that can flourish under such a burden of taxation must evidently be very large. The extent of it is such, indeed, as is not generally apprehended. In fact, in estimating it from the surest data, the results to which our figures carry us almost stagger our own belief. Yet our conclusions cannot be avoided.

We have 1,190 steamboats, carrying 249,054 tons. On the supposition that, upon an average, each boat makes 20 trips (40 voyages) a year, the whole are capable of carrying annually 9,962,160 tons. Adding to this the freights of 4,000 flatboats, carrying an average of 75 tons each, making 300,000 tons more, we have an aggregate annual tonnage of 10,252,160. It may be insisted that the boats do not always carry full freights; they evidently carry enough to make their business an active and profitable one, while the amount they discharge at New-Orleans alone requires the services of 2,085 vessels, to export from that city the surplus beyond its own consumption.

Exports of New-Orleans, foreign and coastwise, 1845.....	\$47,361,310 84
Exports of New-Orleans, foreign and coastwise, 1846.....	57,490,407 08
Increase in 1846.....	10,130,096 24

The value of western products received at New-Orleans from the interior for the last five years, including the present, is as follows:

1842-43.....	\$53,728,054
1843-44.....	60,094,716
1844-45.....	57,199,122
1845-46.....	77,193,464
1846-47, (estimated).....	84,912,810

Showing an annual average increase of over 10 per cent.

An equal amount, it is supposed, finds its way to the Atlantic cities through Pittsburgh and the lakes and canals of the interior. This is not an unwarranted supposition. The *exports* of a few of the principal towns on the Lakes in 1846 were as follows:

Cleveland, Ohio.....	\$7,040,402
Erie, Pa.....	1,073,247
Michigan, from all ports.....	4,647,608
Chicago, for the year 1845.....	1,500,000
Receipts by Canals and Railroads, at Toledo, O.....	3,519,067
At Buffalo, 1846, flour, bbls.....	1,291,233
At Buffalo, bushels wheat.....	3,613,569

At Buffalo, lbs. bacon.....	2,220,673
At New-Orleans, 1846, flour, bbls.....	837,983
At New-Orleans, bbls. and sks. wheat.....	403,786
At New-Orleans, lbs. bacon.....	492,700

Exports of Pittsburgh, East, 1847.—The amount of freights shipped from Pittsburgh eastward, from the 15th of March to the 31st of May, of this present year, not including the shipments of the 31st, is registered at 73,936,390 lbs., conveyed in 1,300 canal boats. From the opening of the canal in 1846 to the 1st of June of that year, the amount transported eastward was 40,109,820 lbs., conveyed in 939 boats—showing an excess for the present year, thus far, over a similar period last year, of 33,826,570 lbs. A single item will give point to the exposition of this canal trade. From the 15th of March, 1847, to the 1st of May, there were shipped eastward on the canal 54,042 barrels of flour. The item of pork for the same period of little over six weeks, shows 22,621 barrels, bacon, 4,073,838 lbs.; lard, 3,729,584 lbs.; hemp, 1,223,988 lbs.; tobacco, 975,148 lbs.

There are to be added to these sums the shipments from one port to another of the West, for home consumption, of the products of our manufactures, and other results of skill, industry and capital. An intelligent committee at Cincinnati, in 1844, estimated the whole of this interchange of commodities at an aggregate of seventy millions of dollars. Estimating its annual increase at 10 per cent., it is now equal to \$93,000,000.

Thus we have of the domestic products of the Valley of the Mississippi annually put afloat upon its waters, a total of \$262,825,620.

The returns, or imports of specie, bullion and goods, from the Atlantic States and foreign countries, by all routes, are estimated as equivalent to the value of our exports of domestic produce. Then we have, as the grand aggregate value of the commerce annually afloat upon the navigable waters of the Valley of the Mississippi, the sum of \$432,651,240, being nearly double the amount of the whole foreign commerce of the United States.

Imports of the United States for 1845-6.....	\$121,691,797
Exports of " " 1845-6.....	113,488,516

Total.....\$235,180,313

From 1822 to 1827 the loss of property on the Ohio and Mississippi, by snags alone, including steam and flatboats, and their cargoes, amounted to \$1,362,500.*

The losses on the same from 1827 to 1832 were reduced to \$381,000, in consequence of the beneficial service of several boats employed by the Federal Government in removing snags. In the year 1830, in conse-

* Abridged Report in Baltimore American.

quence of the successful operation of the snag-boats, not a single steamboat was lost by snags.

From 1833 to 1838 inclusive, the Secretary of the Treasury reported forty steamboats snagged on the Mississippi and its tributaries—a number evidently much below the truth, and valued at \$640,000.

In 1839, the total loss of boats reported was forty—of which twenty-one were snagged, and seven struck upon rocks and other obstructions. Value of twenty-eight snagged, &c., \$448,000.

In 1840, the total number snagged was 21—value \$336,000.

In 1841, whole number reported sunk forty-nine—snagged twenty-nine—value \$464,000.

In 1842, the whole number reported lost was sixty-eight. The number snagged is not ascertained. In the space of about one month succeeding the 11th of September of that year, the losses on the Mississippi, between St. Louis and the mouth of the Ohio, a distance of only 180 miles, were \$234,000, principally by snags. Within the next succeeding seventeen months there were seventy-two steamboats lost, valued at \$1,200,000, besides their valuable cargoes.

In 1846, the whole number sunk or destroyed was thirty-six, with an aggregate tonnage of 7,507. Of this number twenty-four were sunk by snags, sunken logs, or rocks, and valued at \$697,500. To this sum is to be added \$36,487 as the estimated expense of repairing sixty-six steamboats, partially injured in that year, and of fourteen flat and keel-boats lost or injured; the value of eight of them snagged. Taking into the account the damage to cargoes saved, the expense of the labor of saving property endangered, the value of the time of persons thrown out of employment, the losses by delays to the shippers and consignees, the aggregate loss was one million of dollars for 1846.

The report estimates the annual loss by destruction of boats, caused by removable obstructions in the rivers, at two millions of dollars annually. Of this amount government loses its full share, as it has at risk on these waters not less than \$5,000,000, annually. "This," it adds, "is annihilated—so much destroyed of the wealth of the country, amounting every ten years to a sum equal to the purchase money paid by the government for all Louisiana. It is undoubtedly true, that there are lying within the space of the 200 miles between the mouths of the Ohio and the Missouri rivers, the wrecks of over ninety steamboats."

Taking the losses of life attending the disasters of the St. Louis boats, in 1841–2, as a basis, the number of lives annually destroyed in consequence of obstructions, may be estimated at 166. Oftentimes go down among them characters distinguished for industry

and virtue, carrying with them their families and fortunes, in money sufficient, if so applied, to remove every snag from the channel.

The sums of money expended for improvements on the western rivers, from 1824 to 1840, was \$2,528,000. The sum appropriated for light-houses, beacons, piers and harbors on the sea-coast, during the same time, was \$12,901,123.

The city of St. Louis alone owns 23,800 tons of steamboat tonnage, worth \$1,547,000. During 1846 there arrived at that port, exclusive of 801 flatboats, steamboats with a tonnage of 467,824 tons. The total annual commerce of St. Louis, imports and exports included, although yet in its infancy, is estimated at over \$75,000,000, equaling nearly one-third of the whole foreign commerce of the United States.

The following extract from the appendix of the report is worthy of special attention:

The cost of running a steamboat on the western rivers is *six times greater* than the cost incurred upon the lakes. For proof this: The capital invested in the vessels of the upper lakes is estimated at \$6,000,000, and the cost of running them (exclusive of insurance and interest on the capital) is stated to be about \$1,750,000, or about one-third of their value. The capital invested in the steamboats of the valley of the Mississippi is \$16,188,561, and the cost of running them (exclusive of insurance and interest) is estimated at \$32,752,000, or more than double their value.

Having hurriedly glanced at the field of labor which we have marked out for ourself, and presented some of the leading statistics of western trade and progress, it will be necessary, in order to prevent a too great extension, that our present paper be brought to a close. We regret that so meagre are the sources of information it is almost impossible to give the latest data, or that full and complete and minute information which is desirable. However, the meeting of the convention at Chicago, and the report of the committee appointed by it, and referred to in other pages of this work, will, there can be little question, remedy all deficiencies; and the statistics of the West be henceforward more easily obtained.

It will be seen that we have been obliged to rely, in many instances, upon the returns of the census of 1840, taken by government, it being almost impossible to obtain later information of the character there embraced. This census, as we before observed, can give no very adequate notion of the present condition of the West, the progress of seven years having worked, in many quarters, such extraordinary changes. Nevertheless, a general notion may be formed, and an approximate estimate made, which must suffice in the absence of more precise data.

We commend the volumes of Dr. Monette, with which the present article opens, to the American people, as the first effort to furnish a complete history of their great western domain and territories, most signally successful, and the only work, at this time, which can in any degree satisfy the desire of information which is every where felt.—*(For later statistics of the West, see other heads.)*

WEST—COMMERCE AND RESOURCES

OF.—*Coal Resources of the Northwest.*—

Take but a portion of our coal-field, embracing the southern and western counties of Indiana, part of Iowa, Wisconsin, and Illinois, what is commonly called the great "Illinois Coal-field." "It equals in area the entire island of Great Britain, extending from southeast to northwest, from Oil Creek and Rome, on the Ohio, to the mouth of Rock River on the Mississippi River, a distance of three hundred miles; and south to north, from the waters of Green River and Tradewater, in Kentucky, to the waters of Little Vermillion, in LaSalle county, Illinois, a distance of three hundred and twenty-five miles; and from southwest to northeast, from St. Louis and the waters of the west branch of Saline River, in Gallatin county, Illinois, to the forks of the Fox and Kankakee rivers, a distance of two hundred and fifty miles—a coal-field occupying the greater part of Illinois, about one-third of Indiana, a northwestern strip of Kentucky, and extending into Iowa, embracing every variety of bituminous coal. The thickness of the entire mass is supposed to be from 1,200 to 2,000 feet, and contains at least seven *workable* beds of coal. If we assume the average thickness of these coal-beds, collectively, at 21 feet, which is probably below the truth, and the area over which they extend at 200 miles square, or 40,000 square miles, then we have a mass of coal on lands of which the government is the *largest proprietor*, of 23 trillions, 417 billions, 856 millions cubic feet, or 867 billions, 328 millions cubic yards or tons of coal, (a cubic yard of coal being nearly equal to a ton.) Let us imagine this coal worked, and estimating the profit on a ton of coal at fifty cents, this would give, in round numbers, a clear income of four hundred thousand millions of dollars to be derived from the working of this coal-field. It may also be further remarked, that the strata of this coal-field is more easily accessible along the southeastern and southwestern margins, *along the Ohio and Mississippi rivers*, than toward the northeast, by reason of the extensive diluvial deposits, which cover the strata in that direction. But coal comprises, by no means, the entire resources of these valleys. The slaty clays contain certain extensive deposits of clay iron-stone, an ore easily and profitably melted into pig iron. Great Britain produces annually 600,000 tons of iron from ore of the same quality, procured in a similar geological position. Valuable and

extensive deposits of hydrated oxide of iron, an ore of the same kind worked in Tennessee, are also of frequent occurrence near the margin of this coal basin. The proximity of these ores to coal greatly enhances their value, since this is the material used most frequently for their reduction. The sandstone at the base of this formation affords materials for furnaces, grindstones, and buildings; while some of the slaty clays, when disintegrated, produce excellent fire clay. The materials for the production of copperas and alum are also widely distributed amongst the slaty clays, under and overlaying the strata of coal. The importance of the limestone, (so abundant in the whole region,) as a flux for the iron ore, for constructions and burning into lime, are too well known to need comment.

Steamboat Business.—From the document above named, it would appear that the whole number of steamers built in the United States, for the last twenty-five years, was two thousand four hundred and ninety-two, viz. :—

From 1824 to 1829.....	194
From 1829 to 1834.....	304
From 1834 to 1839.....	504
From 1839 to 1844.....	521
From 1844 to 1849.....	969
Total.....	2,492

Two thousand five hundred steamboats built within twenty-five years! If we give two hundred tons as the average of these boats, (and it is probably below the mark), we find that the steamboat tonnage in that period amounted to *five hundred thousand tons*.

Let us now see what part the West had in this business. From the reports on commerce for the years 1846, '48, '49, we find in three years the steamboat holders of the West compare with the total number as follows:

	In the West.	Total in the U. S.
In 1846.....	130.....	175
In 1848.....	152.....	225
In 1850.....	155.....	208
Aggregate.....	437.....	608

Thus we see, that of the whole number of steamboats built the last three years in the United States, *two-thirds* were built on the Western waters; and, of this number, one-sixth were built in Ohio, and one-seventh in Cincinnati. The largest number of steamboats built at any one place were built in Pittsburg. In 1836 there were 143 steamboats, carrying 24,000 tons, navigating the Western waters. In the last five years there have been built 1,000 steamboats. Of these, seven hundred were built on the Western rivers. The life of the steamboat does not average more than five years, but there are a large number which have been repaired, and are much older than five years. It is safe to say, then, that there are more than eight hundred steamboats now running on the Western waters; and, averaging their tonnage at two hundred tons each, carrying *one hundred and sixty thousand tons of freight*. "Here we see one element of the growth of Western commerce

—a commerce whose magnitude must, at an early day, surpass anything the world has ever yet seen of commercial development."

Commercial Statistics.—It is impossible to approximate to anything like the truth in reference to our commercial statistics. We can only aim at it by details furnished in solitary cases, by taking our own products and values, as furnished by the auditors' and assessors' books in the West, and to all of which we have not at present access. Take the article of pork, for instance, and the same may be said of beef. It is out of our power to give the aggregate quantity shipped on the Western waters in any one year. The amount is enormous, and would scarcely be credited if we had the figures. Some approximation, however, may be made by taking the State of Ohio, as an example of the number of hogs assessed for taxes for the last three years. In 1843, the number was 1,436,191; 1849, 1,730,466; 1859, 1,728,794. Of this quantity, it is fair to suppose that *two-thirds* are exported. We have spoken of the connections between the different points in the valley of the Mississippi. They are immense. Not less than *twenty thousand miles* of river coast are accessible to *this point* by steamboat navigation, and the effect of these vast communications on the whole West and Southwest is daily manifesting itself. What is the result? Cities are doubling and trebling their population, farms are opening in all directions, our forests are bowing before the axe of the settler, the green sod of our prairies is everywhere broken up by the plow of the husbandman, our corn and wheat fields teem with the rich abundance of their products. We are not, as we were a few short years since, laboring for our own sustenance, but freighting our products to every clime, where American and foreign ships can carry it; and, in return, receiving the products of other lands for our wants, and upon which *duties* are paid by us to the government, thus swelling their coffers to an amount, we venture to say, received from no other portion of the Union; for there is scarcely an article subject to duty but what enters into the consumption of the Western people; and the importation of these dutiable articles are swelling to an amount that would hardly be credited, did not the statistics of the West show that this was true. Take, for instance, the imports into Cincinnati twenty-five years since, and compare them with what they are now. We set down the value instead of the quantity:

	1826	1848
Coffee	\$198,000	\$1,080,000
Sugar	80,000	1,629,000
Brandies, wines, spices, &c.	200,000	500,000

And yet this is but a single point in the valley. We presume that Pittsburg, Louisville and St. Louis show an equal if not

greater increase; and the consequence is, instead of paying duties, as we formerly did, at ports on the Atlantic, New-York, or New-Orleans, our own commercial towns are *ports of entry and delivery*, and the duties are paid *here*, and the result is now a *direct* importation of foreign merchandise to all the principal towns on the Ohio and Mississippi rivers. These importations keep pace with our increase of population, and but a few years will elapse before the *customs here* will compare favorably with many cities on the seaboard. In former years the foreign goods imported had their duties paid at the cities on the seaboard where they were landed. They were then carried across the mountains, or up the Mississippi and Ohio, to their several destinations in the West. But the whole aspect of commerce in the West is now, in a very great degree, changed by the change of locomotion; and, as has been very justly and truly stated, "the merchants of Memphis, St. Louis, Louisville, Cincinnati, and Pittsburg will be as much the merchants of America as the merchants of New-York, Philadelphia, or Baltimore." The growth of our cities, and the immense distribution of foreign goods *here now*, proves the fact conclusively, while every year the importation of foreign goods to the West *directly* is increasing. The table above shows what it has been to a single city. And this is but one among the great number that are to spring up in our valley. The fact is, and the statistical tables will prove it, that for the last ten years the commerce of the West has grown faster than its population, great as that is. Among the avenues which lead this population and this trade to the West and Southwest, the principal ones are the Ohio and Mississippi rivers, extending, with their tributaries, (many of which are as navigable most seasons as the streams into which they empty,) a distance of twenty thousand miles; running through a region unsurpassed in the world for its agricultural products and mineral resources; running from north to south through *eighteen* degrees of latitude, and having on their margin and along their borders thirteen states of the Confederacy, embracing a population five times as large as the good "old thirteen" at the first organization of our government. What has Congress done for their improvement? Nothing—absolutely nothing. And these great arteries, these great "inland seas," which waft on their surface annually millions of human beings, and carry on their waters an inland commerce far exceeding that carried across the ocean by our whole domestic and foreign marine, are *now*, so far as navigation is concerned—so far as improvement is concerned, but little, if any, better than when the first "broadhorn" floated down the Ohio and Mississippi fifty years ago, and deposited her cargo of flour and whisky in a two months' voyage at the *Spanish port* of New-Orleans.

The action of Congress towards the West has been heretofore of the most anomalous character. Occasionally holding out the promise of some great benefit, of some act to be done which should promote, in some degree, a Western interest, they have so contrived it, that only some *initiator* step should be taken, and then the matter has slumbered, or so worded the act conferring the benefit, that it has, in its *effects*, been rendered entirely nugatory.

WEST—ADVANTAGES FOR MANUFACTURES—MANUFACTURES ON THE OHIO RIVER.—Important elements of a manufacturing district, says a writer of papers in the *Louisville Journal*, are *facilities for moving man and matter, and proximity to the raw material and to the market*. These are resolved into cost of transportation.

General impressions on this point are very erroneous; and, as the result of my statistics may far exceed the belief of those who have not investigated the object, I give the facts for the full examination of all who feel an interest in them.

In these articles I refer specially to the cost of manufacturing and vending cotton goods, because this branch of manufacturing is of more importance and better understood than any other.

Some years since a pamphlet was published in England, by Mr. Graham, on "The Impolicy of the Tax on Cotton Wool." In this is an affidavit of Mr. Gemmell, of Glasgow, who states, "that, although he was for several years in the habit of supplying Chili with cotton domestics, he has latterly been obliged to abandon the trade, in consequence of being unable to compete with the manufacturers of the United States."

Chili is a market equidistant from the two competitors for her trade. What gave New-England such an advantage over the cheap labor, cheap coal, and cheap capital of England? The difference in the cost of transportation on the raw material.

In 1839-'40, Montgomery gives this estimate of the cost of importation of cotton to the British manufacturer, the first cost of the cotton being 14 cents per pound.

Charges on shipment.....	4	per cent.
Freight and insurance.....	12½	"
Importer's profit.....	5	"
Inland carriage.....	1½	"
Duty.....	4½	"
Total average.....	27½	"

While the average cost of the New-England manufacturer is stated at 11 per cent.

The estimate of the actual charges of manufacturing in the two countries gives an average of six mills per yard against us; yet, taking both charges into the estimate, the net advantage was three per cent in our

favor; and besides this, our goods were the best.

Since 1840, the British government has been obliged to take off the duty, but it could not lessen the cost of labor, of power, or of capital. The wages of the operative then were barely enough to support life; the cost of coal must increase as the seams nearest the surface are exhausted; and it is doubtful whether the capital then invested in the cotton mill was paying any interest.

The changes that have since occurred on this side of the water have all been in our favor; that is, so far as the cost of manufacturing is concerned. More experience has given us greater skill; we have more system, and more economy; new facilities of intercommunication have brought our producers and manufactures of cotton nearer to each other and lessened the cost of their mutual exchanges; but, more than all, the cost of labor, in which England had so much the advantage, has been lessened over one-half; that is, less than one-half is now required. Besides, of late years the supply of cotton has been so near the demand, that the price has fallen from 14 cents per pound to an average of 8 or 9 cents; as the cost is reduced our relative advantage is increased.

From these facts we have this *corollary*: that, *as the cost of labor, power and material, is reduced, the cost of transportation rises in importance.*

If England cannot profitably compete with us in the Chili market, certainly she cannot compete with us here; for the width of the Atlantic gives us a protection, directly or indirectly, of at least 15 per cent. *ad valorem*.

In point of fact, just as fast as the American manufacturer is able to supply the home demand in any article, the English manufacturer is driven from our market, unless, to raise money or to break down a rival, he is prepared to sell at less than cost. It is to be hoped that the wages of labor in this country will never be so low that we can compete with China in embroidered shawls or ivory trinkets; or with France and Germany in tapestry or laces made by hand. In such fabrics the cost of transportation bears but a slight proportion to the cost of labor.

It is clear, then, that England cannot sell coarse, heavy, and cheap goods in this valley in competition with our own manufacturer. Let us see if New-England can.

In 1821, I am told, the first mill for spinning cotton yarn on an extensive scale was established on the Ohio. Now, who sees in our stores a hank of English or Eastern cotton yarn? The same cause that has produced this result—that is, the cost of transportation—must, in a few years, build up all the mills we need to supply us with "domestics."

To see what the precise inducements are

to start such a mill here, I give the following details of the cost of transporting cotton from its point of production to us and to the New-England mill, and of the goods from the mill to us. It is clear that the difference in the first and the amount of the last give the sum of our advantages in this item, at least to the extent of our home market.

I base my estimates on a mill of 10,000 spindles for convenience, and because that is near the most economical size. It will be borne in mind that the calculation includes the cost of machinery for preparing the cotton and weaving the goods.

At almost any point on the Ohio River the cost of building is less than in Massachusetts. We have stone, lime, clay, and generally, lumber on or near the spot. There the lumber and lime are brought from Maine; but few positions furnish good clay for brick; and granite is not as easily worked as our lime or sandstone. The moment there is a demand for it, machinery can be made here 20 per cent. cheaper than at the East. The cost now would be nearly this :

The factory building of brick or square stone rubble.....	\$30,000
House for superintendent.....	3,000
Twelve boarding-houses for 225 operatives..	10,000
Warehouse and store.....	2,500
Engine, gearing, and pipes for heating mill,	8,000
Machinery, at \$12 per spindle.....	120,000
Here a working capital, sufficiently large to lay in a stock of cotton for five months, is	46,500
	<hr/> \$220,000

This estimate is larger by \$20,000 to \$30,000 than that made by persons who have far more practical knowledge on the subject than I have.

The longer the material and its product are *in transitu*, or, in other words, the further the manufactory is from the raw material and the market, the larger must be the working capital; and the interest on the difference is fairly a part of the cost of transportation. And besides, as England and New-England are obliged to enter the cotton market once a year, and at the same time, and at the very time when our other great staples are ready for shipment, prices and freights are then generally at their highest rates; sometimes, as we have seen, sufficient means of transportation cannot be had at all; to guard against this contingency, as well as the fluctuations of price, many mills keep a heavy surplus stock. We can command the market at all times; we are always ready to contract, and select our own time to receive the cotton. We are here, also, at the point of consumption; we cannot for years supply the home demand, and our goods will be taken as fast as they are made.

With these facts in view, it is very safe to say that the New-England mill requires a working capital of \$100,000 more than ours ;

but, to be altogether within the mark, put it at \$50,000; the interest on this is the first item of saving or advantage to be carried out—say per annum \$3,000. As we can turn over our capital more than once a year, and its earnings at each time will exceed 6 per cent., we might with propriety make the item much larger.

At Lowell there are forty-five mills, containing 253,456 spindles, and with a capital of \$11,490,000, or over \$450,000 for every 10,000 spindles. If \$50,000 is deducted for capital required to purchase the power, \$50,000 more to cover the difference in communicating the power and the additional cost of buildings, the working capital would seem to be \$130,000 over that required here by my estimate. But I am not advised as to how much of this capital is required to enable the mill to sell on credit, or whether the surplus fund, usually laid aside out of profits, is sufficient for this purpose. The Lowell corporations rarely publish the amount of their reserved funds, or even of their profits, unless when they are remarkably low.

The mill in question will turn out on the average, two tons of goods a day—say 600 tons per annum. The English estimate of waste and loss is one sixth; our rule gives 89 pounds of goods for 100 pounds of cotton; by this, the mill will require 666 tons of cotton per annum.

The following estimate of the cost of bringing dry-goods to Louisville from Boston, *via* New-Orleans, was obtained from one of our largest dry-goods houses, and I feel confident that the rates are below the average :

Boston wharfage per bale	\$0.0½
Freight to New-Orleans per bale,.....	0.45
Charges at.....	0.30
Insurance, 2 per cent. on \$60, or on cost, and 10 per cent. added.....	1.32
Interest <i>in transitu</i> , 40 days.....	0.40
Exchange ½ per cent.....	0.30
Freight to Louisville.....	0.62½
	<hr/> \$3.42
Add average cost on the bale from the mill to and at Boston, at least.....	0.40
	<hr/> \$3.82

The bale, 4-8 brown cotton, of 750 yards, average cost \$60; 3 yards to the pound. This gives over ½ cent. to the yard, 1½ cents to the pound, and \$30 per ton.

There are, however, but few houses that ship by New-Orleans, and at times when freights are low; altogether the largest portion of the brown cottons and prints brought to the central West come from the Eastern agent or jobber, and by the lakes or across the mountains.

This is the *ordinary* course of trade, and there is no reason why we should not base our estimates on what is usually done, if the same system is likely to continue.

By these last routes, as every dry-goods merchant (wholesale) can satisfy himself by reference to his books, the average freight from the eastern cities is from two-thirds to three-fourths of one cent per yard. If to this is added the coastwise freight, insurance, interest, profit of the jobber, or commission of the second agent, the cost will swell up to at least 1 cent per yard, 3 cents per pound, or \$60 per ton.

But, as I have often been told, the agent at Baltimore will sell domestics just as low as they can be had at Boston or Lowell, and the Philadelphia jobber will often sell lower to draw in customers, as he relies for his profits on other goods. All very true; but a moment's reflection will satisfy any man of the fallacy of his reasoning. The manufacturer may wish to get rid of his surplus, and find it his interest to pay the transportation to, and the commission of an agent in a remote market, but this does not lessen the actual cost of the transportation or agency. The jobber may entice a customer into his store by selling silver at fifty cents an ounce, but this does not prove that the ounce of silver is actually worth less than a dollar. The same kind of argument is often applied to cost of transportation on our river. The Peytona will ask \$5 from a passenger to Louisville, who calls her in at Brandenburg, and the price would be the same if he got in at Cairo; yet the writer on the western carrying trade would be laughed at, were he to state that the cost of transportation from Cairo and Brandenburg to Louisville was the same. Coal often sells for a less price at St. Petersburg than at Newcastle; yet no one has attempted to show that the shipment of coal a thousand miles lessens its cost, or that St. Petersburg is the proper site of manufactures, because coal was sold there at a particular day cheaper than at the English coal mines. The balance-sheet of every business must show the profits or losses in each of its branches. The high prices demanded by the larger boats for way-passengers and freight have introduced the river packets, and the extra costs paid by the eastern manufacturer are now building up the western mills.

To return to the figures: the mill given will consume 666 tons of cotton per annum.

Freight from the cotton districts of Nashville, Florence, Tusculumbia, and points on the Mississippi River in Tennessee and Arkansas, and on the Arkansas River, are about the same to Louisville as to New-Orleans. As the river packets multiply, the rates in this direction will probably be lower. Besides, as our agricultural exports increase, the return boats will run light and charge less. Our mill, then, will save the charges on the cotton at New-Orleans and the cost between that city and the New-England mill.

I have not access to a series of New-Orleans prices current, but I presume the following estimate will not be wide of the mark:

Drayage, storage, brokerage, and commission of agent or merchant at New-Orleans per bale of 450 pounds.....	\$1 00
Insurance on \$36 or 8 cents per lb.....	0 50
Freight $\frac{3}{4}$ cent per lb.....	3 38
Interest, 45 days.....	0 27
	<hr/> \$5 15

I might add 1 per cent. loss on exchange, as the cotton is generally paid for by 60-day bills—

Or 1 14-100 cent per pound, on per ton....	\$22 00
Add charges in Boston.....	00 10
Average freight to the mill.....	2 70

Total per ton.....	\$25 80
666 tons required, at \$25 ⁸⁰ , gives.....	\$17,182 80
Add saving in capital per annum.....	3,000 00
Add minimum freight on goods or \$30 per ton on 600 tons.....	18,000 00
	<hr/> Minimum advantage.....\$38,182 80

But if we add the ordinary freight on the goods, or \$60 per ton, we have the *maximum* advantage of \$56,182 80, or an average of \$47,182 80 on a capital of \$220,000 or near 21 $\frac{1}{2}$ per cent.

I say nothing here of the great saving in fuel and in food; to these points, and to giving an aggregate of advantages, I propose to devote another paper.

I believe the foregoing estimates are within the truth, and that I have not been able to get at all the items of cost; indeed, many of these are of such a character that they cannot well be specified; such, for instance, as the expenses and time of the merchant who goes abroad to make his purchases, occasional loss on exchange, and all the contingencies to which a trade between distant points is subject.

It will be noticed that nothing is said here of disadvantages; there are some, and I will endeavor hereafter to state them fairly, and then perhaps you will be surprised to see how few there are, and how easily these can be surmounted.

I have been furnished with the following estimate, which nearly corresponds with the foregoing, and from a source perhaps more reliable than any other in New-England. The comparison is between Massachusetts and Pittsburg:

A mill of 10,000 spindles will turn out 4,000,000 yards of No. 14 sheetings or shirtings, and consume 1,400,000 pounds of cotton in one year. The difference in the cost of the raw material and the cost of sending the manufactured goods to the West, including interest, is, as near as can be estimated, *one cent per yard*, or \$40,000 in one year's work.

If there is but even 15 per cent. advantage (and I challenge the production of *facts* to

show that there is not 20 per cent. in this single item of cost of transportation, how long before our men of capital, who, at most, can get 10 or 12 per cent. interest on moneyed loans, will engage in manufacturing? It needs but the establishment of a single mill on the Lowell system and the making of a single dividend, to draw the attention of every man among us who has spare funds sufficient to buy a share of stock.

WESTERN HUNTERS AND TRAPPERS

—THE FUR TRADE.—At the anniversary celebration (February, 1847,) of the founding of St. Louis, Missouri, much was said in reference to the progress of the western country, but nothing more interesting than the following remarks of Thomas Allen, Esq.

LACLEDE had a monopoly of the trade of the Missouri river, and of the country west of the Mississippi, as high as the St. Peter's. Their furs were generally taken to Canada, whence they were shipped to European ports. Four years were consumed in getting returns of European goods, which also came through Canada. The annual cost of those goods brought here for the fur trade about this period, is stated to have been about \$35,000—on which there was a freight charge of 100 per cent., (no steamboats then,) but the profits, nevertheless, are said to have equaled 300 per cent. The trade of the Missouri river was more valuable than that of all the others united; and the business increased so, that, during the last ten or fifteen years of the last century, the average value of the goods annually sent up that river, in exchange for furs, amounted to something over \$61,000.

It was impossible, owing to the great extent of canoe navigation from Quebec, in Canada, for example, to points 1,000 miles up the Missouri, for single individuals to prosecute the trade. Hence the necessity of companies, by which the trade was always conducted.

These companies subdivided their labors among agents or clerks, canoe men or voyageurs, courriers des bois, or wood-rangers, and hunters and trappers. The goods were sent up the river in Mackinaw boats, carrying 1,300 lbs. to three tons, but bark canoes were employed on the smaller streams and at portages.

But Mr. A. said he saw and felt it was impossible to do justice to the subject on such an occasion, or to compress into a brief and hurried speech, anything more than simple mention of the more prominent transactions.

About the year 1792, several trading voyages were made up the Missouri by Frenchmen and Spaniards of this city, connected with a company formed here by a Scotchman of the name of Todd, under the protection of the Spanish government, the object of which was to monopolize the whole trade of the Missouri. A journal of one of these voy-

ages, made by JOHN BAPTISTE TRUDEAU, our first schoolmaster, has been preserved in the Department of State at Washington. It appears that the petitions of many of these people to the government for grants of land, were based upon the ground of services rendered in these expeditions.

The average annual value of the furs collected here for fifteen successive years ending in 1804, is stated to have been \$203,750. The number of deer-skins was 158,000; beaver, 36,900 pounds; otters, 3,000; bear, 5,100; and Buffalo, only 850. A very different state of things from the present, when the beaver are nearly exhausted, and the most important article in the trade are buffalo robes.

In 1802, James Pursley, an American, with two companions, left St. Louis on a hunting expedition to the sources of the Osage. A most unpropitious and versatile fortune led him, after three years' adventure and hardship, and contrary to all his wishes and intentions, afar off into Santa Fe. Having lost all his outfit, and been repeatedly plundered, he had but a solitary gun left, and the Mexicans were near hanging him for attempting to make a little gunpowder to charge it! He mentioned this case, not only as illustrative of the vicissitudes of the hunting and trapping life, but because he, a trapper, James Pursley, had the honor of being probably the *first American* who traversed the great plains between the United States and New Mexico.

When the government of the U. S. sent Lewis and Clark on their expedition in 1804, and Maj. Pike to explore the sources of the Mississippi, the Arkansas, the Kansas, and the Platte rivers, our hunters, formed into companies, had preceded them, and were then to be found on all the rivers east of the Rocky mountains. Loisel, outfitted by Mr. Auguste Chouteau, of this city, had a considerable fort and trading establishment on Cedar island, a little above the Big Bend of the Missouri. They were dwelling also among the Ottoes and the Missouris, and were of indispensable service to those travelers.

In 1808, the Missouri Fur Company was formed in this city, consisting principally of Pierre Chouteau, Sr., (the venerable gentleman before him,) Manual Lisa, William Clark Sylvester Labadie, Pierre Menard, and Auguste P. Chouteau, with a capital of \$40,000. They sent an expedition under Major A. Henry to the Yellowstone, and established a number of trading-posts upon the Upper Missouri, and one beyond the Rocky Mountains, on Lewis river, and also on the southern branch of the Columbia, being the first post established upon the waters of the great river of the Oregon territory. Our hunters had the honor of it. Mr. A. would pass over the magnificent enterprise of Mr. Astor, of 1809, which terminated in 1812, and with which all were familiar.

The Missouri Fur Company was dissolved

in 1812, and the same year most of the former members of the company in this city established independent houses, with the design of furnishing outfits to private adventurers, in the trade of the Missouri. Of such a character were the houses of Berthold & Chouteau, B. Pratte, J. P. Cabanne and M. Lisa. But few, if any, American citizens prosecuted the trade west of the Rocky mountains from 1813 to 1823.

In 1819, Mr. John Jacob Astor established a branch of his house in this city, under the charge of Mr. Samuel Abbott, and it was called the Western Department of the American Fur Company. This Company embraced the trade of all the northern and western parts of the United States, east of the Rocky mountains. The monument of their success was the inordinate wealth of Mr. Astor.

About this period, a new company was formed here, or rather the old Missouri Fur Company was revived with new partners. They were chiefly Maj. Joshua Pilcher, M. Lisa, Thomas Hempstead, and Capt. Perkins. A hunting and trapping party of this company, under Messrs. Jones and Immel, were attacked by the Blackfeet Indians on the Yellowstone, in 1823, and several of the party, including the leaders, were killed, four wounded, and the party robbed. The company was unfortunate, and continued but a few years.

Then came, in 1823, the high enterprise of General Wm. H. Ashley, of this city, re-establishing commercial intercourse with the countries west of the Rocky mountains. He lost fourteen of his men, and had ten wounded in a fight with the Aricara Indians at the first start. But persevering, Gen. A. and his men ascended to the sources of the Sweetwater, and discovered the *Southern Pass* of the mountains, since the well-known great highway of the nation to Oregon, and discovered also the Green river, beyond, running into the Colorado of California. Here he was very successful, and brought back to St. Louis a large stock of furs, which he sold for unusually high prices. He made another expedition in 1825, and ventured as far as the great Utah Lake, and near that discovered another and a smaller, to which he gave his own name, and there established a fort. Two years after a six-pound cannon was drawn from Missouri to this fort, 1,200 miles, and in 1828, many loaded wagons performed the same journey. Between the years 1824 and 1827, Gen. Ashley's men sent to this city furs of the value of over \$180,000. Having thus acquired a competency, Gen. Ashley sold out all his interests and establishments to the "Rocky Mountain Fur Company," then formed here, in which Messrs. J. S. Smith, David E. Jackson, and Wm. L. Sublette, were principals, and our friend Mr. Robert Campbell, there, on his right, was then clerk—now president of the Bank, aid-

de-camp of the governor, and the incumbent of, he didn't know how many other posts of honor, of which, he was sure, no gentleman was more worthy. These energetic men carried on for several years an extensive and profitable business, during which they traversed every part of the country about the southern branches of the Columbia, and ransacked nearly the whole of California. Mr. Smith was killed by the Camanche Indians, on Cimarrone, in 1831. It was a remarkable fact that, in the period of five years from 1825 to 1830, of the number of our men employed in the trade, *two-fifths* were killed by the Indians, or destroyed by accidents and dangers of the country.

The individual traders of the city united in 1825, in the firm of B. Pratte & Co., and continued thus in the business for six years.

The year 1832 was fruitful in events. Messrs. Sublette & Campbell went to the mountains, Mr. Wyeth established Fort Hall, on the Lewis river, and disseminated much useful information in regard to Oregon; Capt. Bonneville's expedition took place; Fort William was established on the Arkansas by the Messrs. Bent, of this city; a Missouri trapper of the name of Pattie, published an account of his rambles in the northern and western provinces of Mexico, and the American Fur Company sent the first steamboat to the Yellowstone.

Mr. Astor retired from business in 1834, and sold his western department to Messrs. B. Pratte, P. Chouteau, Jr., and Cabanne, of this city, who conducted the business until the year 1839, when the organization took place which now exists. Nearly the entire fur trade of the West is now conducted by the house of P. Chouteau, Jr., & Co., and the company of the Messrs. Bent and St. Vrain.

The annual value of the fur trade of this city, for the last forty years, had been probably between two hundred and three hundred thousand dollars, and had thus been not only profitable to our citizens, but a source of wealth to our city and our state.

Such, said Mr. A., had been some of the services of our hunters and trappers—they had cleared the way for us, their fortunate successors, and laid the foundations of that greatness, to which, as a city, we are rapidly marching. They, however, were going the way of the animals they have exterminated—were disappearing in the direction of the setting sun, expending their remaining energies and final services, in lighting the way and guiding the footsteps of the emigrant and the settler, to the home they are seeking in Oregon and California. Many of them there were, whose unwritten biographies were crowded with "hair-breadth escapes and moving accidents by flood and field," stranger and more romantic than fiction; and he

only regretted that he had not opportunity there to bestow upon them that measure of honor and justice to which they were so highly entitled.

WISCONSIN—PROGRESS AND RESOURCES OF.—The portion of Wisconsin now occupied embraces about 9,900, say 10,000, square miles. It lies mostly south of the Wisconsin and Fox rivers. Other portions of the state are fertile, but the above is the only part of it that has received much attention from the eastern emigrant.

By the census of 1840, Wisconsin had 30,000 inhabitants. We omit the fraction. By the state census of 1847 she had 213,000, making an increase of 183,000, equal to an

annual increase of over 26,000 per year. The ratio of increase has been about 33½ per cent.

There is no probability that she has continued to increase in this ratio, but as she increased at the rate of 33 per cent. up to 1847, there can be no doubt but that for the past three years her annual increase has been equal to what, by the above ratio, she must have increased in 1847, that is 56,185. This would make her present population 381,555.

By the above calculation, the increase of Wisconsin, in ten years, has been 353,555. She presents the most remarkable instance of rapid growth of any Western State. The following table shows the growth of some of the Western States since 1800 :

	1800	1810	1820	1830	1840
Ohio.....	45,363	230,760	581,434	937,903	1,379,467
Indiana.....	4,875	24,520	147,178	343,031	685,866
Illinois.....		12,282	55,211	157,455	476,183
Michigan.....		4,762	8,896	31,639	212,167
Missouri.....		20,845	66,586	140,445	583,702

The increase of the population of this State, great as it is, is much exceeded by the more rapid increase of her products and her commerce. Wisconsin did not begin to export produce to any amount until 1845. Below we give a table of the exports of wheat from the city of Milwaukee for a period of five years commencing at that time. We copy from a report upon the business of that city, made to the Board of Trade, by Alex. Mitchell and E. D. Holton, Esqs.

1845.....	bushels.....	133,310
1846.....	".....	292,228
1847.....	".....	662,211
1848.....	".....	1,076,134
1849.....	".....	2,208,517

Boilers—steam.....	20,250
Sail and rigging.....	17,500
Plows.....	4,500
Clothing.....	97,000
Saleratus and potashes.....	15,000
Lumber planed, &c.....	24,000
Fanning mills and machines.....	25,700
Paper.....	40,000
Copper and iron smithing.....	27,550
Earthenware.....	7,500
Brass machinery and turnings.....	10,000
Tobacco and cigars.....	15,500
Malt liquors.....	71,000
Bread and crackers.....	27,700
Gun and lock smithing.....	9,500
Bookbinding.....	8,000
Coopers' ware.....	8,500
Brick—ten millions.....	40,000
Shingles.....	25,500
Miscellaneous—such as jewelers, gliders, weavers, pump-makers, dyers, tool manufacturers, &c.....	107,000

\$1,714,200

In addition to the above, there are five flouring mills, propelled by water power, and one by steam, containing 17 run of stone, each run capable of turning out 80 to 100 barrels of flour per day, and consuming, in all, 7,000 bushels of wheat daily.

IMPORTS.

Tons merchandise, 16,012.....	\$3,202,400
Barrels of salt, 35,000.....	43,750
Bbls. bulk furniture, 17,500.....	140,000
Coal, water, lime and plaster.....	18,000
Fruit, dried and green.....	11,500
Lumber, lath, shingle bolts, shingles and timber.....	375,000
Miscellaneous.....	38,000
	\$3,828,650

EXPORTS.

Bushels wheat, 1,148,807.....	\$1,004,642 79
Barrels flour, 201,942.....	945,088 50
Do. pork and beef, 5,527.....	44,216 00
Tons lead and shot, 810.....	53,000 00
Hides, 10,281.....	23,132 00
Sundry manufactured articles.....	28,390 00

\$2,998,469 36

ARTICLES MANUFACTURED IN MILWAUKEE, 1849.

Woolen goods.....	\$40,000
Edge tools.....	30,000
Foundries, various machinery.....	195,000
Carriages and wagons.....	115,500
Sash, blinds and doors.....	49,700
Leather.....	120,000
Wooden ware and turning.....	87,750
Lumber.....	20,000
Cabinet ware.....	127,700
Boots and shoes.....	95,250
Tin, sheet iron and copper.....	114,000
Saddles and harness.....	44,000
Soap and candles.....	37,000
Burr mill-stones.....	36,000

Vessels owned in Milwaukee.—There are thirty-nine sail vessels owned in, and sailing out of, this port, of which the total tonnage is 5,542; also stock in steamboats and propellers of 3,000 tons, making the total tonnage owned in the port 8,542.

Sixteen sail of vessels are engaged exclusively in the lumber trade, and the remainder in freighting produce and merchandise.

ARRIVALS DURING THE SEASON OF 1848.

Steamboats.....	498
Propellers.....	248
Barks and brigs.....	119
Schooners.....	511
	1,176

WISCONSIN—MINERAL RESOURCES OF.—Dr. Owen declares the lead region of Wisconsin to contain mines of lead which are inexhaustible, and “decidedly the richest in the known world.” He supposes it to be capable of yielding more than one hundred and fifty millions of pounds of lead annually, which is more than is now furnished by the entire mines of Europe, including those of England, which yield about 98,700,000 of pounds annually. Wisconsin is emphatically *the lead region of the world.*

Dr. Owen’s observations in 1839, on the copper of Wisconsin, fully accord, so far as they go, with the wonderful disclosures that have recently been made. He then predicted, from his geological knowledge, that richer mines of copper would be found in the northern parts of Wisconsin, where the igneous, metamorphic, crystalline rocks come to the surface, these being the rocks which in Cornwall, England, produce copper. The north parts of Wisconsin, on Lake Superior, have since been explored, and the most incredible quantities of copper, mingled with silver, have been found. The dip of the rocks in Wisconsin being south, the lowest strata would be found to the north. The copper ore of Wisconsin is about one-third richer than that of England; indeed, European mines, which afford only three per cent. of copper, pay for the working, after raising the ore from a depth of more than 2,000 feet—a fact showing the immense value of the Wisconsin mines.

Zinc is also found in vast quantities among the lead and copper, in the form generally of an anhydrous carbonate. The miners call it “dry bones,” from its resembling the cellular substance of bone. Sometimes a vein of lead becomes entirely a vein of zinc, and then the unscientific workmen declare that “the dry bones have eaten out all the mineral.” It is regarded as quite worthless by the miners, and considered a nuisance. Thousands of tons of it are thrown away by them, as a worthless drug. It is a true carbonate of zinc, and contains about forty-five per cent. of pure metal. When it is considered that vast quantities of

zinc are imported into this country from Europe, it is a matter of surprise that so much of it should be annually thrown away in Wisconsin. How important an article of commerce zinc is, may be inferred from the fact, that there are about six millions of pounds annually imported into England. Its use in the arts is very extensive. From 13 to 25 per cent. of all brass is zinc. The mines of Wisconsin could probably supply the world with zinc.

In iron, also, Wisconsin is equally rich; but the iron, like the zinc, is a mere drug. Indeed, for some reason or other, it is thought better to import from England into this country, millions of dollars worth of iron, when we have literally mountains of it here, in every direction, with the most unparalleled facilities for its manufacture. In the production of iron, lead, copper, zinc, all the more useful metals, we might rival the world.

Wisconsin, in respect to natural advantages, is scarcely rivaled by any state in the Union. It is not only immensely rich in mineral wealth, but is mostly a region of fertile soil, capable of yielding an unlimited supply of agricultural products common to that latitude, and of engaging in manufactures to any extent. Its numerous streams afford an immense water-power; and with the largest lake in America on the north, Lake Michigan on the east, and the Mississippi on the southwest, its facilities for commerce are not surpassed. Like an island in the ocean, it is bounded on every side by navigable waters, and its products, of whatever kind, can float with equal ease to the Gulf of Mexico, or to the waters of the Atlantic.

WEST INDIA ISLANDS.—GEOGRAPHICAL AND POLITICAL IMPORTANCE OF THE WEST INDIES; SPANISH ISLANDS—CUBA AND PORTO RICO, HAVANA, MATANZAS, &c.; TRADE, COMMERCE, POPULATION, RESOURCES, HISTORY, ETC., OF CUBA AND PORTO RICO; FRENCH ISLANDS—MARTINIQUE, GUADELOUPE, ST. MARTIN’S, MARIEGALANTE, DESIRADE LES SAINTES, THEIR RESOURCES AND COMMERCE; BRITISH WEST INDIES—ANTIGUA, BARBADOES, BURMUDA, ANGUILLA, DOMINICA, GRENADA, MONTSERRAT, NEVIS, ST. CHRISTOPHER, ST. LUCIA, ST. VINCENT, TOBAGO, TRINIDAD, TARTOLA, VIRGIN ISLES, JAMAICA, BAHAMA—ABOLITION OF SLAVERY, PRESENT CONDITION OF THE ISLANDS, &c.; DUTCH ISLANDS—ST. EUSTATIA, LOZA, ST. MARTIN, CUEACOA; DANISH ISLANDS—ST. THOMAS, ST. CROIX, ST. JOHN; SWEDISH ISLAND—ST. BARTHOLOMEW; FREE ISLAND—HAYTI; &c., &c.* (1848.)—Reposing on

* See Cuba—America, and also appendix of third volume.

the bosom of the Atlantic, in a line which stretches southwestwardly from the peninsula of Florida, through eighteen degrees of latitude and twenty-five of longitude, and forming, at various distances with the opposing shores of the continent, the basins of the Gulf of Mexico and Caribbean sea, are found those "isles of the sea," so known and famed as the "Western Indies."

Discovered by the earliest western navigators, and colonized by the leading European powers, these islands constitute, at the present day, what may be regarded the few remaining intermediate links between the civilization, government and laws of the old and new world. A love of adventure and an irrepressible thirst for gain, rather than hopes of refuge, competence and homes, were the motives which drove across the deep their restless colonists—and they have looked ever backward, with filial fondness, to the land of their fathers and of their childhood. The laws that governed them, the institutions they maintained, the protection awarded, came all to them from that quarter. It was but natural they should submit, and that few, if any, of those political changes and convulsions which have marked contiguous regions of America should interrupt the loyalty and repose of the islands.

Thus has been preserved in the West Indies, through all the vicissitudes of European and American policy, the close relationship of colony and mother country. Broken into fragments, around which, and between which, is heard the roar of the ocean—separated in religion and in languages, in education and prejudices—of limited population, and lassitude inherent to tropical suns—what other destiny could be reserved than such as might be vouchsafed in the cunningly devised systems of colonial empire?

The extension southward, over all barriers and in the face of all opposition, within the past few years, of the arms, institutions and policy of the United States, has given rise to speculations in other countries as well as in our own, in regard to the ultimate fate of the islands, which sweep along our shores. The keenest jealousies are exhibited in many quarters.* An injudicious suggestion in our Congress (1848) was not calculated to inflame the resentment of Spain less than the similarly injudicious, but more absurd, one ventured in Parliament by Lord Geo. Bentinck.† It has not gone unheeded in our own country.

The peace of the world will not be disturbed by any contests growing out of the possession, by European powers, of these remote dominions: while amity shall last, their relationships will remain inviolate. In the event, however, of a general war, many and great will be the changes immediately involved. The United States could not, from her position and connections, from considerations of preservation and safety, be a quiet spectator of these changes. Indeed, it may be questioned whether a justifiable cause for interference would not arise simultaneously with them. The least evidence of court and cabinet intrigues, in relation to the islands, it may be asserted confidently, would be met at once, and resisted. This is our declared policy.

The geographical position of the West Indies, midway between the republics of North and South America—their great fertility and productiveness, their important commercial character and facilities, are all circumstances, taken together, well calculated to give them an interest in the eyes of the world, in any event. A desire for information concerning them has become very general, and seeks to be satisfied from every available source. We have, therefore, determined to bring together every thing that can be derived from the latest and most reliable authorities, and present, as near as may be, to our readers, a fair and impartial summary.

The West India Islands, with the exception of Hayti, a free republic, are all under the jurisdiction of European powers, and are thus classified:

WEST INDIA ISLANDS.

1. *Dependencies of Spain.*
Cuba,
Porto Rico.
2. *Dependencies of France.**
Martinique,
Gaudaloupe,
Part of St. Martin's,
Marie galante,
Desirade Les Saintes.
3. *Dependencies of England.†*
Antigua, St. Lucia,
Barbadoes, St. Vincent,
Burmada, Tobago,
Anguilla, Trinidad,
Dominica, Tortola,
Grenada, Virgin Isles,
Montserrat, Jamaica,
Nevis, Bahama,
St. Christopher, Grenadines.
4. *Dependencies of Holland.*
St. Eustatia,
Saba,
St. Martin,
Curacao.

* In a private letter from Madrid we are informed, that when application was made by Louisiana to search the Spanish archives for records of her early history, a report got wind, even in high places, that the object was to vump up a *title to Cuba as part of Louisiana!* Fancy the absurd consternation.

† To seize upon Cuba in satisfaction of the debt due by Spain—to liberate the slaves—to fortify the

island as commanding the Gulf of Mexico and Mississippi Valley.

* French Guayana and Cayenne will be considered with the French American possessions hereafter.

† British Guayana and Honduras are generally classed from their vicinity with the West India possessions. We shall consider them in another place.

5. Dependencies of Denmark.

St. Thomas,
St. Croix,
St. John.

6. Dependency of Sweden.

St. Bartholomew.

7. Independent Island.

Hayti.

AREA AND POPULATION ISLANDS, 1838.*

Area square miles	English	Whites and European Creoles	Indians and free col'd	Slaves	Total pop.
Spanish	58,226	400,000	80,000	540,000	1,020,000
French	125,112	95,000		184,856	280,000
British					889,459
Dutch	10,666	58,800	7,000	72,200	85,000
Danish	170	6,000	3,000	38,000	46,000
Swedish	43	1,992	580	5,428	8,000
Hayti	28,302	28,000			935,000

1. *Dependencies of Spain.*—This early maritime power exercised for a long period the empire of the seas, and sought in colonial possessions all over the world that state and magnificence which little at home could give. Her navigators first descried American soil, and coveted the wealth it was deemed to embody. The history of Spanish progression in the western seas has been marked by rapacity, extortion and blood.

CUBA was reached by Columbus in October, 1492, and retains the name by which it was called by the aborigines, though other titles have been, at different periods, assigned it: as Juana, Ferdinandina, Santiago, Ave Maria, etc. Its shortest distance from the United States is one hundred and thirty miles—viz.: from Point Jacobs to Cape Tanchara, on the Florida coast. The curvilinear length of the island is eight hundred miles, and the breadth varies from twenty-five to one hundred and thirty miles. In soil the island is fertile, except where the limestone is found above the surface. The forests are vast, and mahogany and other valuable woods are native. There are abundant mines of copper and coal, but none of the precious metals. Asphaltum, marble, and jasper are found. Sugar, coffee, and tobacco are the chief agricultural products, and their cultivation has progressed amazingly since the trade of the island was made free, in 1809.

Population, in 1775, 170,370; 1791, 272,140; 1817, 551,998; 1827, 704,487; 1841, whites 418,291, slaves 436,495, free negroes and colored, 152,838; total population, 1,007,624. We have no later returns, although from the extraordinary prosperity of the island, and rapid progress of the slave trade, a very large increase of population might be fairly supposed in seven years.

The export of sugar in 1760, was stated at 5,000,000 lbs.; in 1800, it reached 40,000,000; 1820, 100,000,000; 1837, Custom House returns, to which one-fourth for smuggling is added, 283,126,695 lbs. The number of coffee plantations has increased from eighty, in 1800, to seven hundred and seventy-nine in 1817, two thousand and sixty-seven in 1827, etc. The tobacco culture has steadily increased. In 1826, the export of cigars was 197,000 lbs, which, in 1837, reached 792,438 lbs. Indigo and cotton have declined. From the abundance of cattle, hides have become an important article of export. We proceed to furnish latter tables and returns of agriculture and commerce.

The following table exhibits the commerce of Cuba with all nations, for sixteen years. We shall complete it to date in the fourth volume of the present work to be published supplementary:

COMMERCE OF CUBA WITH ALL NATIONS.

IMPORTS.

Years	National Commerce Dollars	In National vessels Dollars	U. States Dollars	England Dollars	S. American Ports Dollars	France Dollars
1806	2,858,793	314,683	5,632,808	1,323,627	..	1,169,451
1827	2,541,323	349,728	7,162,695	1,618,371	..	1,472,204
1828	4,523,302	431,553	6,599,096	1,770,085	..	1,635,855
1829	4,961,043	844,826	5,734,765	1,837,775	..	1,254,947
1830	4,739,776	1,051,538	4,791,544	1,745,388	..	721,648
1831	4,121,829	1,825,890	4,690,308	1,465,983	..	669,604
1832	3,576,707	3,178,596	3,542,936	1,257,964	..	805,823
1833	3,185,781	4,777,580	4,461,472	1,625,173	1,371,786	927,491
1834	3,412,487	4,970,013	3,690,101	1,676,918	1,747,224	906,414
1835	3,508,349	5,200,955	5,409,919	1,689,465	2,084,552	904,140
1836	4,170,725	5,680,070	6,553,281	1,522,429	1,579,588	817,445
1837	4,359,153	4,966,191	6,548,557	1,373,964	1,099,367	861,360
1838	4,460,987	6,163,152	6,202,002	1,439,300	1,713,650	816,954
1839	5,320,515	7,108,704	6,132,794	1,770,499	1,467,125	714,664
1840	5,295,261	6,684,718	5,654,125	1,439,199	915,541	618,461
1842	5,557,351	..	6,200,221	3,110,698	2,487,894	1,476,752

* There are no later returns, and it may be assumed that these fall short of the reality now, in some points.

COMMERCE OF CUBA WITH ALL NATIONS—continued.

Years	National Commerce Dolls	In National vessels Dolls	U. States Dolls	England Dolls	Sp. American Ports Dolls	France Dolls
1826	1,992,689	185,879	3,894,597	1,583,474	..	1,162,218
1827	2,284,250	184,059	4,107,449	1,605,073	..	1,043,618
1828	1,556,224	717,479	3,176,964	1,611,820	..	754,812
1829	2,292,580	562,653	3,191,535	1,729,404	..	909,808
1830	3,740,737	543,267	4,286,782	1,233,594	..	757,786
1831	2,193,761	723,338	3,921,592	1,567,720	..	441,085
1832	2,173,567	993,404	3,108,466	2,110,686	16,678	360,899
1833	1,854,714	1,274,440	4,386,885	910,918	16,214	531,321
1834	2,074,502	1,401,568	3,824,724	2,081,387	10,275	667,431
1835	1,801,092	1,114,695	4,365,569	1,754,676	36,185	603,985
1836	2,348,453	917,733	5,513,924	1,700,115	248,323	489,654
1837	2,919,474	1,294,282	5,792,623	2,990,466	30,562	1,344,608
1838	2,692,159	1,532,840	5,574,591	3,083,328	70,985	771,574
1839	2,719,792	1,951,785	5,528,045	5,141,098	37,219	845,906
1840	3,473,630	2,044,441	5,660,739	6,749,438	..	908,605
1842	3,729,970	..	5,282,594	9,259,606	301,562	1,617,712

IMPORTS.

Years.	Hanse, Towns, &c. Dolls	Baltic. Dolls	Italy and Portugal. Dolls	Warehouse. Dolls	Total. Dolls
1826	1,631,125	16,849	218,794	1,759,621	14,925,754
1827	1,640,011	192,826	309,047	2,066,646	17,352,854
1828	2,082,906	176,027	282,584	2,033,507	19,534,922
1829	1,346,775	87,886	115,293	2,521,442	18,695,856
1830	1,701,358	81,958	102,116	1,236,283	16,171,562
1831	1,808,899	20,632	50,582	895,061	15,548,791
1832	1,918,197	33,843	87,884	796,511	15,198,465
1833	1,145,967	90,931	96,754	828,193	18,511,132
1834	8,555,363	19,215	151,151	1,134,407	18,563,300
1835	619,211	55,687	145,443	1,107,345	20,722,072
1836	766,959	59,969	92,628	1,009,771	22,551,969
1837	565,048	28,341	95,450	2,639,521	22,940,357
1838	916,498	79,193	64,593	2,873,545	24,729,878
1839	552,078	124,405	36,099	2,087,911	25,217,796
1840	1,010,291	47,914	29,492	3,357,172	24,700,189
1842	3,402,395	188,354	191,464	2,021,394	24,637,527

EXPORTS.

	Dolls	Dolls	Dolls	Dolls	Dolls
1826	2,998,154	487,223	200,661	1,312,839	13,509,838
1827	2,651,083	487,288	439,402	1,483,966	14,286,192
1828	2,809,229	783,521	237,289	1,473,020	13,114,362
1829	2,406,813	904,920	303,540	1,653,247	13,952,405
1830	2,448,290	1,035,268	331,137	1,521,144	15,870,968
1831	2,188,299	544,839	443,466	890,644	12,918,711
1832	2,590,813	1,135,525	393,574	737,009	13,595,117
1833	1,771,351	1,137,774	250,511	815,813	13,996,100
1834	2,269,782	1,081,284	101,443	956,615	14,487,955
1835	2,076,001	994,771	158,926	1,179,252	14,059,246
1836	1,934,935	1,029,570	264,730	1,132,942	15,398,245
1837	2,713,586	644,018	523,106	1,875,918	20,346,407
1838	2,698,163	1,646,953	366,643	1,674,287	20,471,102
1839	2,054,088	266,401	424,905	2,478,848	21,481,848
1840	2,835,620	924,398	319,941	2,987,745	25,941,783
1842	3,588,917	770,667	326,652	1,807,536	26,684,701

The imports of specie from 1839 to 1842, ranged from \$781,631 to \$2,207,178, and the exports from \$1,000,000 to \$1,700,000, during the same time. Of the whole import in 1842, \$9,239,089 were in foreign, and \$15,-

398,430 in Spanish vessels. Of the exports, however, \$20,611,789 were in the ships of foreign powers, and but \$6,072,813 in those of the mother country or the island.

ARTICLES OF IMPORT.

	1839.	1840.	1841.	1842.
Liquors	2,309,558	1,999,958	2,429,910	2,302,701
Provisions	1,885,402	1,836,254	2,180,373	2,093,711
Spices	119,224	114,332	60,274	45,384
Fruits	226,234	229,306	227,569	263,787
Breadstuffs	3,444,850	3,751,568	4,012,498	3,506,383
Linens	2,634,286	2,445,255	1,943,880	3,043,220
Shoes and Leather	651,256	524,934	384,687	385,894
Lumber	1,292,777	1,331,053	1,379,158	1,319,343
Oils	1,015,728	1,105,741	1,443,180	1,449,750

ARTICLES OF IMPORT—continued.

	1839.	1840.	1841.	1842.
Fish.....	398,711	439,739	431,096	448,475
Miscellaneous.....	292,296	296,727	290,789	346,394
Woolens.....	281,065	357,842	195,246	275,936
Cotton manufactures.....	3,086,707	4,132,722	1,875,065	1,749,321
Silks.....	484,062	432,551	304,302	386,064
Metals.....	2,806,697	1,701,852	1,173,995	1,497,392
Miscellaneous.....	4,196,306	4,191,105	3,183,025	3,834,988
In Warehouse.....			3,299,483	2,021,394

The following from the *Diario de la Marina*, exhibits the export of a few principal articles from Cuba, from 1840 to 1846.

Complete returns bringing up the amount of exports to date, will be hereafter given.

EXPORT CUBA—1841-46

	1841.	1842.	1843.	1844.	1845.
Sugar, cases.....	829,556	817,643	889,103	1,009,565	475,286
Tobacco, unmanuf'd, value.....	\$719,369	742,854	901,030	585,156	834,621
" manufact'd ".....	\$1,677,743	1,454,269	2,566,250	1,564,250	1,261,300
Mahogany.....	66,261	56,161	108,370	166,909	212,480
Cedar.....	21,071	40,101	43,947	44,046	65,218
Copper.....	4,505,490	4,981,405	2,013,534	2,003,587	2,199,202

VALUE IMPORTS AND EXPORTS CUBA—1840-44.

	Imports.	Exports.	Difference
1840.....	\$24,700,189	25,941,783	1,241,594
1841.....	25,081,408	26,774,614	1,693,206
1842.....	24,637,527	26,684,701	2,047,174
1843.....	23,422,096	25,029,792	1,607,696
1844.....	25,056,231	25,426,591	370,360

Of the imports for 1844, \$5,726,271 50 were the products of Spain, brought in Spanish bottoms, except the insignificant amount of \$26,972. Of the foreign imports into Cuba the same year, \$6,436,735 were in Spanish bottoms. The *Balanza Mercantile* finds occasion of complaint in relation to foreign shipping, that the trade in Spanish vessels is, in place of increasing, as was hoped for, yearly on the decline. We shall see directly, the commercial, or navigation system, which prevails.

AMERICAN TRADE WITH CUBA.

Years.	Imports from U. S.	Exports to U. S.	Difference
1842.....	\$6,200,221	5,282,574	917,647
1843.....	5,938,073	5,224,068	714,005
1844.....	7,598,661	6,532,292	1,066,369

The history of the Spanish colonies, either continental or island, presents the same pictures of wrong and oppression. They have been regarded, in every period of their existence, by the home government, as entitled to no other rights or privileges than such as might be tolerated by an avaricious despotism. The colonial code asserted the most monstrous principles, whose execution was a warfare against humanity itself. Rapacity and extortion were familiar to the rulers, and to indulge them to the best purpose and with impunity, the darling object of every measure. The crimes which have thus been committed, shock us by their atrocity, and paved the way for those South American and Mexican revolutions, which resulted so happily in independence. With all her greediness of wealth, however, what

has been the progress of Spain, and how miserable and abject is her condition withal!

To give some idea of this colonial system, we would remark, that the whole property was considered as vested in the crown of Spain. It was a capital offence to carry on trade with foreigners, and even the different colonies were forbidden any intercourse. They were not permitted to cultivate certain articles, and the crown reserved the monopoly of others. No other than a native of Spain could fill an office of trust or honor, under the state. Intolerance and bigotry in religion were maintained, and knowledge itself proscribed as dangerous.

The West India Islands, from their extraordinary fertility, experienced less of the ills of these restrictions, at all times; but latterly, the increase of smuggling operations and the impossibility of the colonists being supplied by the mother country with articles of consumption, as well as the progress of more liberal principles, have induced many important modifications in the commercial system of the islands. However, as will be seen directly, a thousand abuses are still suffered to remain.

TARIFF OF DUTIES ADOPTED MARCH 1, 1846.

	Valuation	Rate of Duty per ct.
Ale, cask.....	arroba.. \$1.50	33½
Ale, bottles.....	doz. 3.00	33½
Apples.....	bb1. 3.00	27½
Barrels, empty.....	each. 0.50	27½
Beef.....	bb1. 9.00	33½
Beef, jerked.....	arroba.. 1.75	27½
Beef, smoked.....	qtl. 7.00	33½
Beans.....	arroba.. 0.75	33½
Beer, cask.....	arroba.. 1.50	32½
Beer.....	bottles, doz. 3.00	33½
Biscuit.....	box, 4 lb. 0.75	33½
Boards, white and yellow pine.....	M. ft. 20.00	27½
Bricks.....	M. 12.00	32½
Butter.....	qtl. 14.00	27½
Candles, tallow.....	qtl. 12.00	33½
Candles, sperm.....	qtl. 32.00	27½

TARIFF OF DUTIES—continued.

	Valuation	Rate of Duty per ct.
Cheese, American.....	qtl. \$10.00.....	27 ½
Coal.....	ton 3.75.....	32 ½
Cocoa, Caraccas.....	qtl. 16.00.....	27 ½
Cocoa, all other.....	qtl. 6.00.....	27 ½
Cod Fish.....	qtl. 3.50.....	27 ½
Cordage tarred.....	qtl. 12.00.....	33 ½
Cordage, Manilla.....	qtl. 7.50.....	33 ½
Cotton.....	qtl. 10.00.....	27 ½
Cider.....	bottles, doz 3.00.....	33 ½
Flour, bbl., fixed duty.....		\$9.59
Hams.....	qtl. 10.00.....	33 ½
Hay.....	qtl. 0.50.....	27 ½
Herring.....	box of 100 fish 0.62.....	33 ½
Hogsheads, casks.....	each 2.00.....	27 ½
Hoops.....	M. 30.00.....	27 ½
Horses, geldings.....	each 150.00.....	33 ½
Lard.....	qtl. 12.00.....	33 ½
Mackerel.....	bbl. 3.00.....	27 ½
Nails, copper.....	qtl. 25.00.....	27 ½
Nails, iron.....	qtl. 7.00.....	27 ½
Oars.....	100 ft. 6.25.....	27 ½
Oil, sperm and whale.....	qtl. 10.00.....	27 ½
Onions.....	qtl. 1.50.....	33 ½
Paper, letter.....	ream 2.50.....	33 ½
Paper, wrapping.....	ream 0.50.....	33 ½
Pork.....	bbl. 14.00.....	33 ½
Pork, sides.....	qtl. 9.00.....	27 ½
Potatoes.....	bbl. 2.50.....	27 ½
Rice.....	qtl. 6.00.....	33 ½
Scantling.....	M. ft. 18.00.....	27 ½
Shingles.....	M. 3.75.....	27 ½
Shooks, sugar box.....	each 0.75.....	27 ½
Shooks, hhd.....	each 1.00.....	27 ½
Soap, bar.....	qtl. 8.00.....	33 ½
Staves.....	M. 25.00.....	27 ½
Tallow.....	qtl. 7.50.....	27 ½
Tar.....	bbl. 3.00.....	27 ½
Tongues, smoked.....	qtl. 7.00.....	27 ½

EXPORT DUTIES.

Coffee.....	qtl.....	20
Rum.....	pipes.....	Free
Molasses.....	hhd.....	Free
Honey.....	hhd.....	\$1.37
Sugar.....	box.....	37
Cigars.....	M.....	50
Tobacco.....	qtl.....	1.50

This tariff took effect on the 1st of March, 1846, and on same date the tonnage duty was re-imposed upon vessels loading molasses.

In calculating the duty on imports, 1 per cent. on the amount of duty must be added, called *balanza*.

The valuations are fixed, which of course take away the main characteristic of an *ad valorem* tariff. Discriminations in favor of Spanish shipping are still rigidly observed. Thus, according to McGregor, foreign produce and manufactures in Spanish bottoms, from a foreign port, pay 17½ and 21½, and Spanish produce and manufactures in foreign bottoms, from a Spanish port, pay the same, and foreign produce and manufactures in Spanish bottoms, direct from the peninsula, pay 13½ and 16½. Spanish produce and manufactures, in Spanish bottoms, (except flour,) direct from the peninsula, pay 6½ per cent. on the valuation in the tariff; but after having touched at any foreign port, they pay duty as if shipped from that port. The rates of duty here given were before the adoption of the tariff of 1846.

The export duties are, upon foreign flags, 6½ per cent. upon the valuation of tariff. Spanish flag, for a foreign port, 4½ per cent.; Spanish flag, for a Spanish port, 2½ per cent., except loaf sugar and clayed sugar, the latter of which pays 1.6 per 100lbs., in foreign bottoms.

From the circular of Messrs. Tyng & Co., Havana, 1847, we glean some interesting particulars regarding the Cuban trade. Vessels must have a clean bill of health from the Spanish consul, at the place of departure, or stand quarantine. Passports are delivered to the governor's adjutant by all passengers, and manifest of cargo, &c., to custom-house officer. The correspondence is taken by the post-officer. Wharfage on goods, &c., unless the contrary is stipulated, is paid by the ship. Vessels loaded with molasses, pay no tonnage duties. The rates of commission on purchases at Havana, are 2½ per cent. Sales, 5 per cent. Guarantee, 2½; indorsing and negotiating bills on Europe, 2½; on United States, 1½; collecting freight, 2½; procuring freight, 5; disbursements, 2½ per cent.

Sugar is brought to market till July, but mostly in March, April, and May. It is "clayed" or "Muscovado"—but mostly clayed. The clayed is in boxes, and the Muscovado in casks. The production of *Coffee* has greatly decreased. It begins ripening in August, is picked till January, and brought to market mostly in that and the preceding and following month. Is packed on plantations, and sold by brokers. The export of *molasses* is chiefly to the United States. It is carted from estates to shipping points, the earliest being in December. The valuation is by the keg of 5½ gallons, and the wooden cask is valued at 5½ cents a gallon. *Honey* is exported largely, but is full of impurities. *Tafia*, or Spanish brandy, made from the refuse of sugar-houses, is sold by the pipe. *Tobacco* is divided into two classes, according to the place of production, whether east or west of Havana. That from the east is very inferior. The Calidad is the best tobacco. The secundas, an inferior class of wrappers, &c. The crop appears in market in July. *Wax* is shipped in cakes, fifteen inches wide, thirty long, and three thick. The *regalia cigars* are manufactured from the libra, or Calidad tobacco. Those for the English market are put up in large cedar cases, of from fifteen to thirty thousand.

Taxation in Cuba is prodigious, a half million of whites paying twelve millions of dollars, to be expended mostly abroad. Foreigners are strictly watched. They must buy passports, and give security for good conduct. Their baggage is subjected to search. They must have additional passports for traveling in the island, or for leav-

ing, to gratify avaricious officials. In a thousand annoying ways, these absurd jealousies and prejudices are exhibited, to the manifest detriment of the island.

There are twelve ports in Cuba, at which export and import duties are collected. The value of the trade of these, and amount of duties, are given below.

TRADE OF THE SPANISH WEST INDIA PORTS, 1842.

	Imports	Duties	Exports	Duties
Havana.....	\$18,801,913	\$4,449,215	\$13,118,585	\$710,613
Cuba.....	2,382,938	531,673	6,784,765	153,096
Nuevitas.....	171,383	65,116	205,116	9,967
Matanzas.....	1,801,558	525,352	4,365,926	328,078
Trinidad.....	828,185	215,145	1,129,501	91,152
Baracoa.....	87,490	18,741	85,233	2,932
Gibara.....	172,084	38,189	248,763	19,089
Cienfuegos.....	195,935	78,663	509,806	35,478
Manzanillo.....	117,031	48,041	170,984	12,981
Santo Espiritu.....	14,906	7,158	23,488	2,140
Santa Cruz.....	44,589	21,517	34,322	4,981
San Juan.....	19,519	6,877	8,208	1,203
	\$24,637,430	\$6,005,627	\$26,684,697	\$1,371,710

We furnish a list of the articles of domestic export the same year. There were also exported \$138,349 foreign goods, and \$1,807,536 from warehouse.

DOMESTIC EXPORTS CUBA, 1842.

Mahogany.....	\$56,161
Spirits from cane.....	204,550
Cocoa.....	32
Cotton.....	75,834
Coffee.....	2,998,269
Sugar.....	11,447,009
Cedar.....	40,101
Wax.....	290,828
Copper ore.....	4,981,405
Hides.....	21,130

Sweatmeats.....	7,091
Fruits.....	49,298
Honey.....	71,325
Molasses.....	744,608
Horses and Mules.....	1,205
Fustic.....	..
Cattle.....	..
Cigars.....	749,812
Tobacco.....	1,461,760
Other articles.....	200,289
Quicksilver.....	*
Indigo.....	†
Cochineal.....	‡
Coined Gold.....	154,055
Coined Silver.....	1,136,605
Other metals.....	46,903

The manufactured goods imported were from the following countries :

IMPORTS MANUFACTURED GOODS INTO CUBA, 1842.

Countries	Cottons	Woollens	Linens	Silks	Leather	Lumber and Provisions
Spain.....	\$35,621	\$1,452	\$14,073	\$67,442	\$119,113	\$2,870,287
United States.....	80,905	13,217	158,466	69,361	8,620	3,104,945
France.....	245,046	18,434	665,634	102,943	52,039	184,293
England.....	631,944	171,481	464,687	44,152	20	215,373
Holland.....	4,008	..	1,789	..	..	142,350
Belgium.....	46,171	14,725	74,320	24,947	28,414	25,461
Germany.....	282,151	43,118	1,695,643	19,010	4,177	154,083
Warehouse.....	178,117	5,611	158,542	13,491	768	16,970
Other places.....	1,552	5,100	383	1,101	60,488	1,106,077
Total.....	\$1,505,515	\$273,138	\$3,233,537	\$342,447	\$283,639	\$7,819,839

* In 1839, \$9,900.

† In 1810, \$210,344.

‡ In 1839, \$254,300.

COMMERCE OF CUBA.

1849.				1850.			
Ports.	Importations. Doll's.	Exportations. Doll's.	Total. Doll's.	Importations. Doll's.	Exportations. Doll's.	Total. Doll's.	
Spanish.....	7862757 68½	3113070 50	10795828 18½	8640625 93¾	3071084 75	11711710 68½	
United States.....	6578295 31½	6301657 62½	12879952 93¾	6653360 56½	8359252 93¾	15012613 50	
French.....	1252466 12½	1212900 37½	2465375 50	1747580 18½	1862596 18½	3610176 37½	
English.....	5810670 31½	7127420 43½	12938090 75	6117669 37½	7061056 93¾	13178726 31½	
Spanish American.....	2197630 75	872083 06½	3069713 76½	2001664 56½	578237 68½	259902 25	
German.....	1223681 37½	1712067 18½	2935748 56½	2107293 43¾	1871620 00	3978913 43¾	
Belgian.....	402785 18½	673562 25	1076347 43¾	318881 87½	963393 12½	1282275 00	
Portuguese.....	12849 25	14720 50	27569 75	..	..	..
Brazilian.....	..	..	..	33882 18½	..	33882 18½	
Dutch.....	194147 31½	301365 00	495512 31½	190479 56½	554450 31½	744929 87½	
Danish.....	357134 81½	230754 68½	587889 50	520200 81½	279037 56½	800138 50	
Russian.....	..	638702 62½	638702 62½	..	446770 50	446770 50	
Swiss.....	..	36150 00	36150 00	..	11262 00	11262 00	
Prussian.....	120 00	..	120 00	..	..	..
Austrian.....	..	16964 87½	16964 87½	..	..	..
Italian.....	27313 75	185128 56½	212442 31½	13297 18½	572286 00	585583 18½	
Mercantile deposits.....	580608 12½	..	580608 12½	638291 62½	..	638291 62½	
Total.....	26320460 00	22436556 68½	48757016 68½	28983227 56½	256318 00	54615175 4509¼	

COMMERCE OF CUBA—continued.

	IMPORTATION.			EXPORTATION.		
	1849	1850	Increase	1849	1850	Increase
Spanish bottoms...	\$16366844 81½	18455071 62½	2088226 81½	5573535 37½	6020639 68½	447104 31½
Foreign "	9953615 18½	10528155 93½	574540 75	16863021 31½	19611308 31½	2748287 00

The interior is, to some extent, now opened by rail-roads, constructed by English and Americans, of which there are some eight hundred miles. It is marked by many natural beauties, and exhibits high prosperity. The following, from Dr. Wurdeman's Notes, will be interesting:

A Coffee Estate.—"The cherries ripen from August to December, and are all gathered singly by the hand; and as three or four different crops are all ripening at the same time, on each tree, as many separate pickings are required. Brought in baskets from the field, they are daily exposed to the sun, on the secaderos, but on each night raked together in heaps, and covered by tents of rice-straw, to protect them from the heavy dews. After three weeks they become quite dried, and are then fit for the mill. The secaderos often cover a large surface of the batey, or yard; an estate of four hundred thousand trees having twenty-five, each sixty feet long and fifty feet wide. They are made of stones, plastered smoothly over with cement, with raised edges, through which openings, guarded by comb-like gates, permit the rain-water to escape, and stop the berries. Sometimes, between the secaderos, plastered gutters are constructed, to convey the water into a general reservoir; which is very useful in a country where every painful of that necessary fluid has often to be raised from a well two or three hundred feet deep.

The storehouse is generally about one hundred feet long, fifty feet wide, and twenty feet high, to the eaves of a high pitched roof. Within this large building is also the coffee-mill, consisting of a large circular wooden trough, two feet deep, and in width tapering from two feet at the top to one at the bottom. A heavy, solid, wooden wheel plays in it, about six feet in diameter, and eight inches in thickness at its circumference, increasing to two feet at its centre. The berries are thus permitted to roll between it and the sides of the trough, which is kept well supplied to prevent their being crushed by the wheel, which cleanses them chiefly by pressing them forcibly against each other. The shaft is fixed at one extremity by a ring to a central post, and, to the other, the ox or the horse is attached. The dried cherries, conveyed through a funnel from the store-room above, fall into the central space, whence they are thrown into the trough, from which also those already crushed are withdrawn, and sent into the

cleansing room. Here they are put into a fanning-mill, which not only separates the husks from the berries, but also divides the latter into two sizes, the larger rolling over a wire sieve into another room, while the smaller grains, with the pebbles, fall through it on the floor. The latter are then spread in heaps on long tables, around which the negroes are seated, and the broken and disorted grains are separated and set apart for the use of the planter. For this very quality, rejected by us, and called triage, consists chiefly of the round small grains produced by old trees, and possesses the finest flavor. It is kept from year to year, and when old, is equal to the best Mocha coffee.

It is now fit for market, and is packed in bags of Manilla hemp, the only material that can resist the force produced by the swelling of the grain, from the absorption of the atmospheric moisture. Some pass the coffee a second time through the mill, which polishes it. A few, before submitting it to this process, mingle it with husks that have been parched by fire, thus painting each grain a dark green; but this deception is readily detected by rubbing them on a white handkerchief. The grinding continues through December, and, by the end of January, the whole crop is generally sent to market."

"White Havana Sugar.—To make the white Havana quality, it is removed from the trough into earthen or tin conical pans, each capable of holding about eighty pounds of the mass, having at their apices, openings closed with a few dried cane leaves, through which the molasses percolates and falls into the gutters below. Clay, made into a soft paste, by being well mixed with water, is next spread over the sugar about three inches thick. The water, separating slowly from it, passes through the brown sugar below, and washes off the molasses from each grain, converting it into the quality known as Havana white. After a certain time, the mass becomes consolidated, and the loaf is removed from the pan, and carried to the driers—large wooden frames fixed on railways—on which they can be readily rolled under cover of the shed, when it rains. The base of the conical loaf is the whitest, while the apex is of a dirty brown hue, and the intervening portions of a light brown. It is divided into these three kinds by the negroes, who, with their cleavers, walk over the sugar with their bare feet, cutting the masses into small lumps. To a stranger, the sight of two or three dozen half-naked negroes, thus em-

ployed, under a broiling sun, and sweating over their task, is far from being pleasant. A machine has, however, been lately invented for crushing the loaves, and the present unclean method will probably be generally abandoned."

COST AND EXPENSE OF SUGAR PLANTATION.

53 cavallerias (1767 acres), at 250.....	\$13,250—tribute at 5 per cent.....	\$662
100 negroes.....at 450.....	45,000 " " 12 ".....	5,400
50 oxen.....at 50.....	2,500 " " 12 ".....	300
1 steam-engine, and two trains boilers.....	15,000 " " 12 ".....	1,800
Purging and storehouse, etc.....	30,000 " " 12 ".....	3,600
\$105,750		
1 engineer for 6 months.....	\$600	
1 mayordomo, 12 ".....	360	
1 mayoral 12 ".....	600	
1 ox driver, 12 ".....	360	
1 negro carpenter and three coopers.....	780	
1 white carpenter, twelve months.....	720	
1 sugar master, 800 hhds., at \$1.....	800	
Physician, each negro per annum at \$2.....	200	
Clothing and food for slaves, at \$10.....	1,000	
Incidental expenses.....	5,000	10,420
Annual expense.....		\$22,182
Proceeds plantation—800 hhds. sugar, Muscovado, at \$50.....	\$40,000	
400 " molasses, at \$5.....	2,000	
Annual proceeds.....		\$42,000

Havana.—This is the most important commercial city in the West Indies, and, until the relaxation of Spanish colonial policy, engrossed nearly the whole foreign trade of Cuba. Its population and prosperity have increased with great rapidity. In 1791, the former was 44,357; in 1810, 96,304; in 1827, 94,023; in 1845, according to Dr. Wurdeman, the city and suburbs, including prisoners and transient persons, did not fall short of 184,508 individuals; 43,860 only, being within the walls. The resident foreigners were 18,977; 15,986 being from Spain and the Canaries, 623 from France, 327 from England, 153 from Italy, 309 from the rest of Europe. There were also 81 from Porto Rico and the Philippines, 670 from Mexico, Columbia and Peru, 160 from St. Domingo, 663 from North America. At the present time, this population cannot be less than 200,000.

The streets of Havana are few and narrow, but straight, and crossing each other at right angles. Being without sidewalks, and in the business season crowded, they are difficult of passage. The houses are constructed of stout masonry, and are very substantial. The value of lots is exorbitant, and rents are in a similar ratio. Many of the private residences are costly and magnificent structures. Dr. Wurdeman remarks:

"I was shown one belonging to one of the Gomez, that cost five hundred thousand dollars; and without the wall, facing the military parade ground, another was nearly built which, with its pillars and arches, occupied a front as large as some of the minor palaces in Europe. The value of real estate is very high in Havana; a lot of 60 feet square, on which a store was afterwards built, sold a few years ago, for \$40,000, and the hotel of my host, that can accommodate from thirty

boarders comfortably, to sixty, packed away, as they often are here, commands a rent of six thousand dollars. With such a value set on the land, but little is appropriated to yards, and the whole city may be said to be divided into squares of solid blocks.

"Every window, accessible either from the street or the roofs of neighboring houses, is strongly barricaded with iron bars, while the stout folding doors, guarding the only entrance to the whole building, would not be unfit to protect that of a fortress. They are castellated palaces; and with their terraced roofs, their galleries and passages, their barricaded windows and ponderous doors, remind one of the old Saxon strongholds, which Scott has so graphically described.

"There is no West End in Havana; the stately mansion of the millionaire is often in juxtaposition with the magazine of the *tasajo*; jerked beef, with its sign of a large slice swinging over its door, and its putrid-like odors tainting the air; or its basement, occupied by the *tienda*, with its stock of lard, garlic and groceries; or the workshops of the humble artisans. Many of the dwellings are, however, only of one story, and their parlors are completely exposed to the gaze of every one, through their large windows which open on the street. Two rows of arm-chairs, facing each other, are placed near these, where, during the evening, the older members of the family may be seen seated with their visitors. The younger ones stand within the windows, looking through the interstices of the iron bars, at the pedestrians, and occasionally enjoying the conversation of an acquaintance, as he loiters for a moment to pay a passing compliment."

The suppression of the Monastic Orders in Cuba, and confiscation of their immense

possessions, are sufficiently known. But few of the monks are now to be found in the city. The tithes, however, are still collected, but no permission for the erection of a Protestant church can be obtained.

Havana was originally established on the south coast of Cuba, near Batabano, but was removed in 1519, to the present site, on account of the insalubrity of the other. The governors now reside in the city, though formerly St. Jago de Cuba was selected by them. A French corsair reduced the town to ruins in 1538. In 1655 the English, in an attempt upon Havana, were repulsed with great loss. In 1762 they captured it with sea and land forces, reducing the Moro Castle. This expedition was under the Earl of Albemarle, and consisted of 53 vessels of 2,268 guns and 14,000 soldiers, 2,000 being from New-England, Virginia and Jamaica. The Spaniards had 27,000 men, 1,200 guns, and 12 mortars. The resistance was terrible. At the peace of 1763, the city was restored to Spain.

The harbor of Havana is magnificent, and capable of accommodating with safety, 1,000 ships. The entrance between the Moro and Punta castles, is 1,500 yards long, and at the narrowest, 350 wide. Depth of water at entrance, 8 fathoms. The wharves are not extensive, the ships lying with stems or sterns to the shore. From the Calanas the view is magnificent.

"Far down lies a forest of masts, the tops of which are hardly on a level with the base of the fortress; and just beyond is the populous city, with its solid blocks of turreted houses, occupying every space of the level land, and creeping half way up its surrounding hills. Carry your eyes southward, and trace the shores of the little bay, everywhere studded with villas, its bosom covered by the large fleet of vessels from every nation, riding securely at anchor; and the summits of the adjacent heights, crowned by the forts protecting, while perfectly commanding, the city—presenting, in their sullen grandeur, a strong contrast with the peaceful look of the latter. How dwindled to pigmies are the moving throngs below; yet how the sound of their mingled voices sweeps upward. Even here, you can distinguish almost the words spoken. And that sudden burst of music from those numerous convent bells, playing their merry tunes as if to arouse the buried monks once more to life's joys. Now they cease, and now again they all strike up a din that would start a fireman from the sleep of death."

Discriminating duties are levied at Havana, for the support of the dredging machine, wharf dues, light-house fees, health officer's fees, custom-house fees, &c. The duties on some articles, where the amount is over \$1,000, are payable at stated periods, and

the credits, which are sometimes very long, have never yet resulted in loss to the government. Should the consignee's promissory note for the amount not be met, he must ever afterwards pay cash duties. The Spanish coins, weights and measures are as follows:

SPANISH COINS, WEIGHTS AND MEASURES
—*Coins*.—One dollar = eight rials; one Spanish doubloon = seventeen dollars; one South American doubloon = sixteen dollars.

Weights.—One quintal one hundred pounds, or four arrobas of twenty-five pounds, one hundred one and a half pounds English, or forty-six killogrammes.

Measures.—One hundred vrs. = one hundred yards; one hundred and forty vrs. = one hundred French ells or aunes; eighty-one vrs. = one hundred Brab. ells; one hundred and eight vrs. = one hundred and sixty Hamburg ells; one fanego = three bushels nearly, or two hundred pounds Spanish; one arroba of wine or spirits = four and one-tenth, one wine gallon, nearly.

The tariff of 1846, established at Cuba, is even more favorable for Spanish vessels than previous ones. The rates of duties, however, on many important articles, have been modified materially. The export duties have also been changed. Foreign vessels pay 23 per cent. additional tonnage duty, to bring them to the Spanish standard of measure. The health officer now receives twelve dollars for a vessel of 300 tons, or six if she be Spanish. The disbursements by a foreign shipmaster, on a vessel of 160 tons, in all the various charges, reach as high as \$900 or \$1,000. So rigid is the system which prevails!

We make another extract from notes on Cuba, which is interesting:

"The Spaniards are chiefly the owners of the stores, the Creoles being seldom engaged in commerce. Those containing dry goods belong generally to Asturians, while the sale of groceries and provisions is monopolized by Catalans. These latter are an industrious, shrewd, economical class, and have, perhaps, in consequence of these qualities, received their *soubriquet* of Spanish Jews, which can only be construed into a compliment to the Israelite. A large portion of the commerce of the island is in their hands, as well as a very great part of the wealth. In the interior of the island, they appear to monopolize every branch of trading, from the pack of the humble peddler to the country tienda, with its varied contents, and in the maritime towns, many a commercial house, whose ships cover the sea, is theirs. The Catalan furnishes the planter with all the necessaries for his negroes and plantations; advances money for his crops, which he then sells on commission; and often loans to him the requisite sums to erect his costly sugar-works,

or make his less expensive coffee estate, but all at an interest ruinous in the present depreciated value of his crops."

EXPORTS OF PRODUCE FROM HAVANA FOR TWELVE YEARS.

Years	Sugar, boxes	Coffee, arrobas	Mulasses, hubs	Honey, tierces	Wax, arrobas	Rum, pipes	Cigars, M	Tobacco, lbs
1834.....	202,207	915,601	39,283	1,444	22,271	2,479	116,442	540,357
1835.....	300,218	793,392	42,355	1,403	23,303	3,583	64,733	660,915
1836.....	313,978	839,956	44,778	1,340	20,489	3,009	94,564	1,293,803
1837.....	321,657	1,409,789	43,278	1,399	35,414	2,497	143,705	1,119,185
1838.....	344,493	864,490	56,451	1,173	20,251	3,976	171,413	1,528,125
1839.....	330,624	1,174,996	51,902	1,526	29,535	6,670	153,370	1,359,029
1840.....	447,578	1,272,822	47,006	2,113	24,447	8,472	137,067	1,025,262
1841.....	346,890	742,570	49,909	1,974	28,815	8,753	159,450	1,452,989
1842.....	427,947	1,081,468	37,459	2,643	29,351	6,785	130,727	1,018,990
1843.....	461,307	773,043	35,711	2,198	37,048	6,223	152,009	2,138,802
1844.....	531,582	579,248	33,812	1,963	31,759	4,966	149,583	1,286,242
1845.....	267,595	170,466	20,075	847	31,409	2,727	119,271	1,633,073

Comparative Statement of the Exports of Sugar, Coffee, and Tobacco, from Havana, for the first six months of 1846 and 1847.

Ports	Sugar, boxes		Coffee, arrobas		Tobacco, manufactured		Tobacco, leaf	
	1846	1847	1846	1847	1846	1847	1846	1847
Spain.....	74,969	50,466	21,598	23,087	4,654	17,651	474,314	144,402
United States.....	52,960	110,532	36,633	68,323	23,483	15,044	407,152	163,191
England.....	2,369	57,911	465	1,298	11,103	12,511	104,172	16,625
Cowes.....	83,303	62,489	48	2,836	630	1,804	6,933	.....
Baltic.....	6,825	24,710	.....	2	1,356	181	.....	.....
Hamburg and Bremen.....	41,954	30,586	5,944	21,266	5,801	9,971	877,021	249,408
Holland.....	5,956	15,569	12	146	766	1,350	25,100	.....
Belgium.....	8,840	17,370	6	16	1,278	1,779	9,500	7,875
France.....	15,973	13,437	13,944	97,764	19,981	19,588	50,872	131,000
Trieste and Venice.....	8,464	8,796	14,821	47,830	360	5,513	.....	1,102
Italy.....	6,883	3,947	800	8,282	1,588	653	9,358	.....
Other ports.....	5,131	6,489	1,559	11,331	2,620	2,162	51,644	6,690
Total.....	513,318	401,302	95,530	282,201	75,620	88,208	2,016,066	720,293

TONNAGE OF HAVANA, 1844-5.

	1844		1845	
	No. vessels	Tons	No. vessels	Tons
American vessels arrived.....	866	161,395	543	98,245
British.....	116	58,338	109	55,91c
Spanish.....	526	79,978	575	88,523
Dutch.....	21	3,981	19	2,838
Belgian.....	15	4,054	13	3,017
French.....	25	5,772	21	4,550
Hamburg.....	15	3,290	6	1,261
Bremen.....	27	5,027	20	3,679
Danish.....	23	4,731	10	1,605
Others.....	46	11,298	63	14,649
Total.....	1,680	332,964	1,379	274,483

There are many learned institutions at Havana, among others, the Royal University, with medical and law schools, and chairs of natural science; a Royal Seminary for girls, a school for sculpture and painting, a free mercantile school, a museum of natural history, and many other institutions of public charity and benevolence; but with all, education is but sadly attended, and it becomes necessary to go abroad to seek it.

The Patriotic or Economical Society, addresses itself to the education, agriculture, commerce, popular industry, and history of Cuba. It has a public library, and publishes monthly papers and reports of the most valuable character.

There are thirteen printing offices in Havana, and twenty-six in Cuba; but the news-

papers, which are sufficiently numerous, are under so severe a censorship, that they can be of little value. The number of merchants, in 1840, was one hundred and forty, and their operations are conducted without a single bank, but bonds and obligations circulate freely.

Matanzas is the second town of Cuba, and is distant fifty-two miles from Havana. We extract the following description of it:

The first lines of the city were traced in October, 1693, by Senor Manzaneda, under whose government it was founded. To the city itself, was given that of San Carlos Alcazar de Matanzas—the last, that by which it is generally designated, signifying the slaughter of a battle field.

"The back country of Matanzas is rich in

sugar and coffee estates, and after it was made a port of entry, it increased rapidly in trade and commerce. It now extends an arm across the San Juan River, into the adjacent Mangrove swamp, where an embryo city has sprung up, called the Pueblo Nuevo, and over the Yumuri, at the base of the Cumbre, another arm, named Versailles. Including these two suburbs, its population, in 1841, amounted to nineteen thousand one hundred and twenty-four, of whom ten thousand three hundred and four were whites, three thousand forty-one free colored, and five thousand seven hundred and seventy-nine were slaves. The same year, four hundred and eighty vessels entered its port, of which three hundred and two were American, and five hundred and fifty-eight sailed from it, paying to the government, in tonnage and other duties, nearly a million of dollars. Its importations

amounted to \$1,995,311, of which \$434,599 were for lumber from the United States, and its exportations to \$4,374,780, of which \$3,733,879 were for sugar, \$351,733 for molasses, and \$163,385 for coffee."

"The houses of Matanzas are mostly of stone, built, like those of Havana, in a very durable manner, with their windows as strongly barricaded with iron. But the number constructed of wood, the English, one continually hears along the Bay street, and the general cleanliness of the town, give it somewhat of a home air. It wants the bustle of Havana—nor has it as many sources of amusement; but to many, its very quiet forms an attraction, and the proximity of its beautiful passeio, from which a fine view of the whole bay is obtained, its purer air, and the romantic scenery in its vicinity, induce many to prefer it as a residence."

EXPORTS FROM MATANZAS FOR 1847.

	Sugar bags.	Coffee lbs.	Molasses hds.
New-York.....	45,904	185,227 $\frac{1}{2}$	4,934
Boston.....	32,060 $\frac{1}{2}$	82,150	8,375
Charleston and Southern ports.....	7,550	117,475	5,648
Philadelphia.....	28,405 $\frac{1}{2}$		
Rhode Island.....	3,073 $\frac{1}{2}$	3,477 $\frac{1}{2}$	5,114
Portland and other Northern ports.....	1,108 $\frac{1}{2}$	17,850	10,501
England.....	68,085 $\frac{1}{2}$	32,650	5,792
Cowes, I. W.....	50,009	5,050	31
Gibraltar.....	1,697	83,400	
English Provinces.....	5,009 $\frac{1}{2}$	125,175	5,998
Hamburg and Bremen.....	21,583	3,009,425	
The Baltic.....	16,322	350	
Holland.....	7,403	150	2,500
Belgium.....	14,285		1,026
France.....	8,862	201,250	
Spain.....	18,459	176,952 $\frac{1}{2}$	96
Italy.....	2,657	168,745	
The Adriatic.....	27,390	150	
Various ports.....	761	32,800	
Havana.....	23,546	749,260	
Total.....	387,171	3,405,777 $\frac{1}{2}$	54,841

The following will show the number of vessels, the amount of tonnage, and the nation to which belonging, employed in exporting the above:

	Ships and Barks	Brigs	Schooners	Polacres	Lugger	Tons
American.....	79	165	71	—	—	59,057 $\frac{1}{2}$
English.....	46	62	10	—	—	30,697 $\frac{1}{2}$
Spanish.....	17	42	1	17	—	15,048 $\frac{1}{2}$
French.....	4	—	—	—	—	1,287
German.....	19	15	—	—	—	11,530
Russian.....	2	2	—	—	—	1,210
Prussian.....	2	1	—	—	—	1,092
Swedish.....	3	3	—	—	—	2,410
Norwegian.....	1	2	—	—	—	756
Brazilian.....	—	2	—	—	1	850 $\frac{1}{2}$
Total.....	173	294	82	17	1	153,939

Puerto Principe is the capital of the Central Department of Cuba. It is one hundred and fifty-one leagues from Havana, and has a population of 13,817 whites, and about 10,000 slaves and colored. Its importations in 1841 were \$186,825, and exports \$74,595.

Trinidad is ninety miles from Havana, on the south coast. Population, 5,877 whites, 4,474 free colored, 2,417 slaves. Imports,

1841, \$942,661. Exports, \$1,157,571. *Santi Spiritus* contains 5,296 whites, 2,722 colored, 1,466 slaves. *Santiago de Cuba* is two hundred and thirty leagues from Havana, on the south coast. Population 24,753. Importations in 1841, \$2,631,421. Exportations, \$5,993,631. On the southern coast of Cuba there are twenty-eight harbors and roadsteads.

As a citizen of New-Orleans, we cannot leave the island of Cuba without remarking upon the interesting relations it sustains to ours, more than to any other American city. We are in more constant and immediate intercourse, and it appears but a part of our own South, unnaturally and arbitrarily separated. In the progress and prospects of Cuba, it is but natural we cherish a deep interest. Alas! the time has not yet come for her regeneration! Even the Englishman, M'Culloch, can say:

"It is not easy to exaggerate the political importance of Cuba. Her size, geographical position, and the situation, great strength and admirable harbor of the Havana, render her, as it were, the mistress of the Gulf of Mexico. No wonder, therefore, that her possession and the nature of the government to which she is subjected, should be objects of intense interest to the United States, and also to Great Britain and other commercial nations. On the whole, it would seem to be most to the advantage of the commercial world, that Cuba should continue, as at present, dependent upon Spain, or that she should become independent. So long as she remains under Spain, there is but little risk of her natural capabilities being turned to the prejudice either of commerce in general, or of that of any particular state. But there is good reason to fear that it would be very much the reverse, were Cuba to come into the possession of the United States, or of any of the great European powers. Instead of ministering exclusively to the wants of a great and growing commerce, she might then be converted into an important military station, and be employed as a basis for warlike operations, that could not be carried on without great injury to the trade of the western world."

Slavery in Cuba would appear a fixed institution, and no power has succeeded in

arresting the progress of the slave-trade with the coasts of Africa, which has steadily progressed, and is now in extraordinary prosperity. The demand for slave sugars, induced by their cheapness and the removal of duties abroad, enhances the value and the demand and supply of slaves. Many thousands are annually introduced. Dr. Wurdeman tells us, that in 1843, two thousand Africans were congregated in and near Havana, for sale. Thousands are sold on the coast at the plantations. The slave laws are liberal in many respects, and the government prescribes their rest, diet, clothing, allowances, &c. They are not to be worked over nine hours a day, except in the grinding season, then sixteen hours. The slave may compel the master to sell him his freedom. The laws are not all, however, observed; though the monstrous stories which have been propagated by British philanthropists and praters, about the cruelty, oppression and tyranny exercised by the masters over the islands, are altogether malicious fabrications. Wurdeman, who traveled through them, speaks of the condition of the slave as equal to that of the operatives of Europe, and to that of the negroes in many of our southern states.

Porto Rico is an island of about one hundred miles in length and an average breadth of thirty-nine miles. It was discovered by Columbus, and the natives exterminated in 1509 by Spaniards from St Domingo. The present population is 500,000, of which 50,000 only are slaves, and are governed by arbitrary Spanish laws. There are no manufactures, though gold, copper, iron, lead and coal are found in the island. About one-fifth of the area is in cultivation—in sugar, coffee, plantains, maize, rice, tobacco, cotton, etc. The seaports are San Juan, 30,000 inhabitants, and eleven others.

IMPORTS, EXPORTS AND DUTIES OF PORTO RICO, 1842 AND 1843.

	1842	1843
Imports.....	\$5,757,403	\$4,312,546
Exports.....	6,429,257	5,054,905
Duties.....	1,438,351	1,682,201

ARTICLES OF EXPORT, 1842 AND 1843.

	1842	1843
Rum.....	2,097 hhd.	1,157 hhd.
Cotton.....	882,061 lbs.	350,553 lbs.
Sugar.....	91,906,688 lbs.	71,039,913 lbs.
Hides.....	567,052 lbs.	509,777 lbs.
Coffee.....	12,878,953 lbs.	7,756,335 lbs.
Cattle.....	3,548 head.	2,595 head.
Molasses.....	3,037,725 galls.	2,280,115 galls.
Tobacco.....	6,693,953 lbs.	1,453,145 lbs.

ARTICLES OF IMPORT.

Liquids.....	\$212,700	Cottons.....	365,781
Salt provisions.....	68,853	Woolens.....	41,339
Other provisions.....	106,856	Linens.....	296,789
Spices.....	7,989	Silks.....	86,421
Fruits.....	29,251	Perfumery.....	72,155
Grain.....	614,208	Woods.....	176,68
Soap, tallow, &c.....	121,824	Gold and silver coin.....	192,95
Fish.....	301,452	Other articles.....	727,24

The great excess of free population in Porto Rico, and of Europeans, distinguish it from all the other islands. The healthfulness of the climate, and extraordinary fertility of the soil, is one leading cause of the distinction. Much of the cultivation is effected by the whites, and it is remarked by Flintner :

"The necessities and many of the luxuries of life, are enjoyed by the great majority of the inhabitants of Porto Rico. The Xivaros, a name applied to all the whites below the better classes, swing themselves to and fro in their hammocks all day long, smoking their cigars and scraping a guitar. A few coffee plants and plantain trees, a cow and a horse, an acre of land in corn or sweet potatoes, constitute the property of what would be denominated a comfortable Xivaro, who, mounted on his meagre and hard-worked horse, with his long sword protruding from his basket, dressed in a broad brimmed straw hat, cotton jacket, clean shirt, and check pantaloons, sallies forth from his cabin to mass, to a cock fight, or to a dance, thinking himself the most happy and independent being in existence."

2. *Dependencies of France.*—The American empire, which once existed in such vast proportions under the flag of France, has dwindled almost into insignificance. With the exception of the diminutive islands of St. Pierre, Miquelon and Langley, near the coast of Newfoundland, and the strip of land on the coast of South America, entitled Guiana,* she has only remaining a few unimportant possessions in the West Indies, which we shall proceed to notice at length.

It was said of the colonial empire of France, by Mr. Burke, that it approached the perfection of administrative wisdom—a position combated by McGregor, who thinks that but for the very errors of this

* *French Guiana* is on the South American coast, two hundred and fifty miles long, and one hundred to one hundred and ninety broad. Population in 1837, 21,648, of which 16,502 are slaves. The capital is built on a small island, called *Cayenne*, off the coast. "The sugar cane was introduced by the earliest colonists, and its culture has been greatly extended since 1829. There are from thirty to forty large establishments for the manufacture of sugar, and in all about fifty sugar mills, twenty-seven of which were, in 1836, worked by steam. The cultivation of coffee has decreased. The value of export and import trade in 1836, chiefly with France, exceeded 6,000,000 francs. Some French adventurers first settled at Cayenne in 1694, and with only a few interruptions from the Dutch and English, the French held that station and the rest of the colony till 1809; it was then taken possession of by the English and Portuguese, and held by the latter till 1815, when, in pursuance of the treaty of Paris, it was restored to France."

administration, Hayti would still have been retained, the richest of all the islands. The colonies were placed under the superintendence of a council of Commerce in Paris, who received a fixed compensation for their services, and were endowed with extraordinary powers in regard to every thing of commercial and industrial interest. Navigation and trade were restricted to France. The taxes were light, and no import duties were levied, and but nominal export. The colonial system became thus one of great oppression upon the home government, and could only be supported by excessive taxation. Even the benefit expected by the mother country, from exclusive trade, proved illusory on account of the perfidy of colonial officers and hardihood of smugglers.

The terrible struggles which the political barometer indicates, for many years to come in France, before that nation shall pass under a sound, liberal and constitutional government, give an interest to any inquiries concerning her. The declaration of her revolutionary government, that the emancipation of slavery in the West India colonies, will be one of the first measures of popular sovereignty, fearfully admonishes of the dangers of which the times are pregnant. We recur to Hayti, and the blood which the old revolution of France caused to be shed there, and the horrors of servile insurrection. Are these scenes again to be enacted? In any case, how will that magnificent island, now under its *free blacks*, compare with what it was under the institution of slavery; and where are those "British Isles," once such garden spots and sources of inexhaustible wealth, now that the recklessness of pseudo-philanthropy has released from labor, and thus practically enslaved *doubly* its operatives? But all of this we shall see fully anon.

Gaudaloupe embraces two islands, divided by Salt River, which is navigable for small vessels. These islands are entitled Grande Terre and Basse Terre, and are about five hundred and thirty-four square miles each. The harbor of Le Petit cul de Sac is well sheltered. The town of Gaudaloupe extends along the shore, is well built, and has a population of 7,500. *Mariagalante*, *Saintes*, *Desirade* and *St. Martin*, (French Port,) are dependencies of Guadalupe. The first is a small island of sixty square miles area, whose capital is Grandbourg, a neat village; the second consists of rocky cliffs and hills, producing coffee and cotton in the northern districts of Mariagalante; the third is a small island, six miles from Gaudaloupe. We shall consider St. Martin hereafter.

	Population		Population
Guadaloupe	26,168 free	81,642 slaves.—Total	107,110
Mariagulate.	3,072 "	10,116 "	13,188
Saintes.	570 "	569 "	1,139
Desirada.	498 "	1,070 "	1,568
St. Martin (French) ..	544 "	2,925 "	3,869
	31,252	96,322	127,574

About one-fourth part only of these islands is in cultivation, producing sugar, molasses, rum, coffee, cotton, cocoa, cloves and tobacco. The colony has two delegates in Paris.

Martinique is of volcanic formation, and two-fifths of the surface have been reduced to cultivation. Population, 100,000; capital, St. Pierre, the largest and best built town in the Lesser Antilles, with a population of 20,000. It is well fortified. Fort Trinité, a town of 6,000 inhabitants, on the eastern coast, has a large trade. Area of Martinique, 244,348 English acres. The cultivation of sugar cane has progressed rapidly of late. Four or five hundred persons are engaged in navigation and the coasting trade. In 1826 there were employed in sugar-making one hundred and eighty-three water mills, twenty-seven wind mills, and two hundred and eleven cattle mills. In 1836 were added thirteen *steam* mills. The number may now be supposed larger. The population in 1836 was, free, 37,955; slaves, 78,076; free whites

estimated 9,000. From 1831 to 1836, 17,579 slaves were emancipated, and to 1842, 3,534 more. We have seen a higher estimate of population, viz.: 40,000 free and 117,592 slaves.

In 1831 a law was passed providing for the gradual emancipation of slavery throughout the French West Indies, which has been carried out in some degree, it being the intention of France to rely upon the beet root at home for her supply of sugar, should the worst happen from this change. One would suppose she has already paid sufficiently for this *home sugar* monopoly. An account before us states the whole slave population of French West Indies at 229,708, and whites 77,115. The sugar crop is estimated at 147,652,022—only a little short of that of Louisiana the past year. This sugar pays a duty in France of \$7,000,000. It remains to be seen, though it can easily be predicted, what shall become of all this sugar when emancipation falls like a blight upon the island.

OFFICIAL VALUE OF THE TRADE OF FRANCE WITH GUADALOUPE.

	Imports		Exports	
	Gen. Trade	Spec. Trade	Gen. Trade	Spec. Trade
1831	frances 26,184,000	23,910,000	12,143,000	12,817,000
1832	23,367,000	24,328,000	22,908,000	22,491,000
1833	21,161,000	19,371,000	12,296,000	22,236,000
1834	24,556,000	18,390,000	14,385,000	14,386,000
1835	23,738,000	18,806,000	16,508,000	16,362,000
1836	23,641,000	18,687,000	20,204,000	19,945,000
1837	17,236,000	18,251,000	17,615,000	17,578,000
1838	21,502,000	17,046,000	15,193,000	15,018,000
1839	25,276,000	18,707,000	14,726,000	14,560,000
1840	20,333,000	20,769,000	16,807,000	16,431,000
1841	20,445,000	15,792,000	17,377,000	17,357,000

TRADE FRANCE AND GUADALOUPE, 1841.—EXPORTS.

	Gen. Trade			Gen. Trade	
	Special			Special	
Sugar	frances 18,886,000	14,292,000	Sweatmeats	frances 9,000	7,000
Coffee	780,000	697,000	Cassia	—	—
Dye & Cabinet woods ..	295,000	274,000	Annatto	—	—
Rum and Taffia	182,000	177,000	Tobacco	—	—
Cotton Wool	145,000	156,000	Iron Cables	4,000	2,000
Hides untanned	54,000	84,000	Tortoise shells	2,000	2,000
Copper	37,000	37,000	Other articles	56,000	50,000
Cocoa	15,000	14,000			

IMPORTS GUADALOUPE, 1841.

Tissue of cotton	frances 4,637,000	Salt meat	frances 247,000
" flax, &c.	2,204,000	Goods for use	230,000
" silk	335,000	Medicines	202,000
" wool	424,000	Haberdashery	180,000
Hides, tanned	950,000	Paper, &c.	164,000
Wines	859,000	Perfumery	161,000
Brandy, &c.	153,000	Wood	144,000
Wheat meal	811,000	Blood	30,000
Metals, worked	630,000	Casks, empty	14,000
Butter	495,000	Jewelry	480,000
Codfish	451,000	Colors	123,000
Mules	121,000	Materials	152,000
Olive oil	370,000	Other articles	1,982,000
Wax, &c.	261,000		
Pottery, &c.	261,000		
		Total	17,377,000

OFFICIAL TRADE OF FRANCE WITH MARTINIQUE.

	Imports		Exports	
	Gen. Trade	Spec. Trade	Gen. Trade	Spec. Trade
1831.....frances	18,992,000	17,454,000	12,638,000	13,649,000
1832.....	16,403,000	16,956,000	21,259,000	19,261,000
1833.....	14,762,000	13,270,000	12,438,000	12,399,000
1834.....	17,230,000	13,001,000	14,465,000	14,480,000
1835.....	16,244,000	13,181,000	16,710,000	16,369,000
1836.....	15,429,000	13,175,000	15,656,000	15,068,000
1837.....	13,428,000	12,513,000	17,308,000	17,283,000
1838.....	17,112,000	12,020,000	15,594,000	15,496,600
1839.....	17,277,000	14,104,000	16,507,000	16,366,000
1840.....	15,390,000	14,901,000	20,955,009	20,869,000
1841.....	16,664,000	14,545,000	18,330,000	18,315,000

TRADE FRANCE AND MARTINIQUE, 1841.

	General Trade			Special	
	frances			frances	
Sugar.....	14,670,000	13,000,000	Old iron.....	43,000	43,000
Coffee.....	430,000	414,000	Tortoise shell.....	15,000	12,000
Dyewoods.....	339,000	365,000	Sweatmeats.....	13,000	12,000
Rum and taffia.....	284,009	214,000	Gold sweepings.....	9,000	19,000
Cassia.....	221,000	4,000	Cotton wool.....	—	—
Vanilla.....	194,000	25,000	Brass, raw.....	—	—
Hides.....	156,000	147,000	Tin.....	1,000	1,000
Cocoa.....	128,000	93,000	Lead.....	1,000	1,000
Copper.....	72,000	72,000	Other articles.....	88,000	123,000

IMPORTS MARTINIQUE, 1841.

Tissues of cotton.....frances	4,302,000	Butter.....frances	387,000
“ Flax.....	2,502,000	Perfumery.....	326,000
“ Wool.....	448,000	Codfish.....	281,000
“ Silk.....	425,000	Haberdashery.....	268,000
Wines.....	1,139,000	Mules.....	229,000
Hides.....	1,004,000	Medicines.....	185,000
Olive oil.....	680,000	Goods.....	179,000
Salt meat.....	540,000	Paper, &c.....	152,000
Pottery, &c.....	495,000	Wood.....	79,000
Jewelry, &c.....	455,000	Soap.....	63,000
Metal works.....	451,000	Thread.....	54,000
Flour.....	500,000	Materials.....	116,000
Candles.....	417,000	Other articles.....	2,638,000

3. *Dependencies of Great Britain.*—The extraordinary colonial empire, extending over all the world, which Britain has maintained within the last three centuries, is an object of admiration, however contemplated. Even the errors of her policy, co-operated by almost universal adoption among other nations, and so much reprobated by enlightened economists of the present day, are lost sight of in the magnitude of the results. Her aim has been *extension and power*, and “maritime supremacy” and “commerce.” She has regarded the surest means of obtaining and perpetuating these. Although despoiled of her thirteen colonies, and of the immense territories of the American Union, which her oppressions drove into successful revolt, she has still upon the continent and approximate inlands, as much of territory remaining as the whole United States, supposing we had come out of the Mexican war with our old boundaries. With even this, however, her craving appetite for empire is ill appeased.

The possession of colonies, whatever might have been the fancies of other times, or even the results, is never likely again, in the notions of liberty, independence, and free commerce, universally afloat, to be of much advantage to the parent country. They will not, it is hardly supposable, in the future,

submit to arbitrary restrictions and irresponsible power, exercised from abroad. The colonist is a free man in his new, as much as in his old home. He loses no right. If anything, his independent step should attach other, and even higher, rights and privileges. His connection with the home government is nothing, save only so far as it is his will to be connected. If protection be required, their allegiance is due, to that extent and no more. He can elect at pleasure to change his government, whose only force exists of right in sufferance. In view of these truths, how remarkable and atrocious then must appear those arbitrary systems of colonial empire which the nations of the old world have so arrogantly set up!

An able English writer has expressed these opinions in a manner which defies contradiction, and we extract with great pleasure:

“We hope it will not be supposed, from anything now stated, that we consider the foundation of colonial establishment, as generally speaking, inexpedient—we entertain no such opinion. It is not to the establishment of colonies, provided they be placed in advantageous situations, but to the trammels that have been laid upon their industry and the interference exercised by the mother countries, in their domestic concerns, that we object. Every individual ought to have full

liberty to leave his native country, and occasions very frequently occur, when governments may advantageously interfere to settle emigrants in foreign countries; and when the soundest policy dictates the propriety of their supporting and protecting them until they are in a situation to support and protect themselves. There can be no question whatever, that Europe has been prodigiously benefited by the colonization of America. The colonists carried the arts, the sciences, the language, and the religion of the most civilized communities of the old world, to regions of vast extent, and great natural facilities, occupied only by a few miserable savages. The empire of civilization has, in consequence, been immeasurably extended, and while the experience afforded by the use and progress of communities, placed under such novel circumstances, has served to elucidate and establish many most important and fundamental principles in government and legislation, Europe has been enriched by the vast variety of new products America has afforded to stimulate the inventive powers of genius, and to reward the patient hand of industry.

"But whatever may have been the advantages hitherto derived from the colonization of America, they are trifling, compared to what they would have been, had the European powers left the colonists at liberty to avail themselves of all the advantages of their situations and avoided encumbering themselves with the government of extensive territories 3000 miles distant. Fortunately, however, a new era has at length begun—*notus sæculorum nascitur ordo!* The monopoly of the trade of America is destroyed, and her independence achieved. From Canada to Cape Horn, every port is ready to receive adventurers from Europe; and a boundless field has, in consequence, been opened for the reception of our surplus population, and for the advantageous employment of European arts, capital and skill. The few remains of the old colonial system which still exist, and which are principally to be found in the mercantile policy of this country and France, cannot be of long duration. Their mischievous operation is no longer doubtful, and they will disappear according as the knowledge of sound commercial principles is more generally diffused." *M'ulloch on Colonies*, 1 Com. Dic. 413.

Antigua, a fertile island, forty miles north of Guadalupe, twenty-five northeast of Montserrat, and thirty south of Bermuda, is eighteen miles in length and twelve in breadth, covering an area of one hundred and seven square miles. Its form is of an irregular oval, shore high and rocky, indented by bays and harbors. Except to the southwest, the approach to the island is very dangerous. Sugar plantations are scattered over more than one-half of it and provisions are raised on the remainder. It has several good harbors, the best of which is English Harbor,

deep enough to admit the largest ships. A narrow isthmus divides it from Falmouth Bay, at the bottom of which lies a very thriving place called after the bay. St. John's is the capital of the island.

Columbus discovered this island in 1498, and named it after a church in Seville. In 1666 it was taken by the French, in whose possession it did not long remain. The climate of Antigua is healthy. From 1817 to 1836, the average annual mortality was not more than half that of the West Indies generally. During the same period, the births among the slave population more than compensated, by seven hundred, the decrease by deaths. In Louisiana, far different results are apparent.

The products of the island are sugar, molasses, rum, and small quantities of arrow-root and tobacco.

QUANTITIES SHIPPED IN 1836.

Sugar	15,739,180 lbs.
Molasses	522,050 gall's.
Rum	11,362 "
Arrow-root	25,290 lbs.
Tobacco	21,000 "

Quantity and Value of various Articles of Merchandise exported from Antigua during the year 1832.

Description of Goods	Quantity	Value in Sterling Money
Arrow-root	6,354 lbs.	£342
Coffee, colonial	31,281 lbs.	781
Copper, old	25,066 lbs.	999
Corn, viz., wheat flour	7 bbls.	14
Dye and hard woods, colonial	6 tons	20
Fruits	value	2
Hides	number	312
Iron and steel manuf- ture, British	value	25
Lime-juice	galls.	30
Linen, entered by the yard, British	yards	140
Molasses	galls.	678,500
Spirits, rum	galls.	115,420
" shrub	galls.	390
Succades	value	8
Sugar	lbs.	17,165,610
Tobacco	lbs.	400
Tortoise shell	lbs.	56
Wines of all sorts	galls.	265
Wood	value	5
Miscellaneous articles, value	—	6,659

Total.....£169,244

The rum is of excellent quality. Value of exports in 1836, £175,808; imports, £191,817. Sugar has for a long time been the staple production of the island. The cane is said to have been introduced by Col. Codrington, who settled on the island in 1674. The quality was at first black, harsh and coarse, but these obstacles were at length overcome, and a grade of sugar produced equal to any shipped to the European markets.

Mr. Coleridge thus describes the island as approached from the harbor of St. John's:—

"The heart of the island is verdant with an abundant pasturage of grassy down, and

the numerous houses of the planters, embossed in trees, have more of the appearance of country mansions in England than almost any other in the West Indies. The shores are indented in every direction with creeks, and bays, and coves—some of them running into the centre of the plantation like canals—some swelling into estuaries, and others forming spacious harbors. Beyond these, an infinite variety of islands and islets stud the bosom of the blue sea, and stand out, like so many advanced posts of defence, against the invading waves. They are of all shapes and sizes, and are given up to the rearing of provisions and the maintenance of a great number of cattle. From the same hill (Monk's Hill), when the western sky is clear, Guadeloupe, Montserrat, Nevis and St. Kitt's, may all be distinguished by the naked eye.*

Barbadoes.—One of the lesser Antilles and the most ancient of British colonies, is about one hundred miles east from St. Vincent. It is twenty miles long, and, in the widest part, about fifteen broad. As compared with other islands the surface is low. There are no traces of volcanic action in Barbadoes,* though, at intervals of several years, there are tremendous hurricanes exceedingly destructive of life and property.

It is not known when Barbadoes was first discovered. Previously to 1600, it was not

noticed on the charts of European navigators. By no hostile force has Barbadoes ever been captured. It is said to have been first visited by the Portuguese, who named it Los Barbados, from the number of fig trees—whose branches were likened to luxuriant beards.

Barbadoes is surrounded by coral shoals and reefs. The number of sugar estates in this island is five hundred—worked, with the exception of one steam mill, entirely by wind. The population, in 1844, numbered 123,000—two-thirds black. There are five newspapers published at Bridgeton, and a paper was established as early as 1731. In 1842 there were forty-four merchant vessels, and a hundred and eighteen transient traders, doing business regularly with the island. Imports, 1842, from Britain, £459,180; foreign and colonial, £50,936. One-sixth of the imports are cod-fish, grain and flour, chiefly from the United States and British North America. The exports are sugar, rum, molasses, arrow-root, aloes, cotton, ginger, cocoanuts, logwood, hides, tamarinds, cocoa, coffee, &c. Indigo, tobacco and fustic, were formerly grown. The export of cotton is only about three hundred bales. This is the only English island where the export of sugar has not diminished since emancipation.

EXPORTS OF BARBADOES, 1831-43.

	Sugar, cwt	Rum, gallons	Cocoa, lbs	Molasses, cwt	Coffee lbs
1831.....	322,779	20,730	2,554	15,562	2,420
1832.....	266,464	5,740	2,468	7,081	158,198
1833.....	384,971	696	8,403	47,246	48,371
1834.....	394,527	2,170	72	55,525	77,868
1835.....	344,689	1,798	77	58,125	57,825
1836.....	373,428	738	4	47,558	33,523
1837.....	445,713	914	7,115	70,293	24,619
1838.....	473,587	455	2,652	98,683	37,569
1839.....	395,109	502	6	76,444	20,884
1840.....	207,484	778	31,016	35,959	74,167
1841.....	257,108	250	—	25,475	1,513
1842.....	312,563	158	35,054	53,003	19,688
1843.....	349,048	460	18,476	68,975	12,637

North of *Antigua* is situated the unimportant island of *Burmuda*, whose population, chiefly black and not exceeding four hundred, occupies a territory fifteen miles in length and eight wide. Corn, cotton, pepper, tobacco, &c., are produced abundantly, but no sugar. The government is proprietary.

Anguilla, the most northerly of the Caribbean islands—named from its resemblance to a snake. Length twenty-five to thirty miles, breadth six miles; population three thousand, two thousand four hundred being

black. The island has only been partially cultivated, and the products are not numerous.

Dominica is in surface 186,436 acres, and sustains a population of 18,830—14,384 being black. The soil is light and more fitted for coffee than sugar. Cabinet woods abound, and good fisheries. The average export of sugar, in 1836, 1837 and 1838, was about 35,000 cwt.; of coffee 240,000 lbs.; rum 10,000 gallons; value of exports, in 1836, £78,282; imports £68,077. The island was discovered by Columbus in 1493; ceded to England by France in 1763; retaken by the French in 1778, and restored at the peace of 1783.

Grenada—Area 80,000 acres; population in 1836, whites and free colored races, 4,220, apprenticed laborers 18,316. The climate is

* The base of the island being of calcareous rock, formed of madrepores and other marine concretions, is supposed, like many of the surrounding isles, to be of volcanic origin.

unhealthy, though the soil is very prolific. The imports into Great Britain from Grenada were, in 1838 :

Sugar, raw.....	156,798 cwt.
Rum.....	234,991 galls.
Molasses.....	18,359 cwt.
Coffee.....	21,647 lbs.
Cotton.....	109,945 "
Cocoa.....	426,626 "
Arrow-root.....	3,630 "

St. George, the capital, has a population of 2,780. The island was colonized by the French about 1650; was afterwards taken by Britain; retaken; and finally restored. Lieut. Col. Capadose, who visited the colony a few years ago, remarks: "Grenada has flourished, but its commerce has declined; estates once valuable have been sold at a ruinous loss to the owners; and it is melancholy to see the empty stores and warehouses on the quay; why this is, one more skilled in commercial statistics must determine. I can but hope brighter days are to come, when the sun of prosperity will again shine on the lovely mountains and valleys of Grenada, and make it as rich in civilization and trade as it is in the beauties of nature; when it will be estimated, not for the Italian softness of its scenery, but regarded as a pearl of great price among the Antilles.*

Montserrat is a small island dependency of Antigua, whose area is but 30,000 acres, and population 7,600, mostly blacks. The country is highly mountainous. The health is favorable. Exports, sugar, 1839, 13,443 cwt.; and 29,460 gallons rum. Value of exports and imports £9,500 each. It was originally colonized by the English.

Nevis—Population 11,500; length six and a half miles, breadth about the same. The inhabitants find employ chiefly in the cane culture and preparation of rum. In 1839, 36,466 cwt. sugar, and 39,252 gallons rum, were exported to England. Exports, £12,203; imports, £27,183.

St. Christopher.—The population in 1844 was 23,177. The whole area is 43,720 acres, one half being unfit for cultivation. Sugar is chiefly raised, and the export of the island in 1833 was 91,765 cwt.; in 1843, 6,351 hhd. The whole exports and imports of 1836, £244,047. It was ceded to the English at the treaty of Utrecht in 1713. Capadose remarks: "The inhabitants of St. Christopher may well boast of their island beauties; and in good truth, if the loveliness of nature can produce happiness, they are blessed indeed."

St. Lucia.—By the last census it contains 13,448 blacks, and 16,017 inhabitants. The tables of mortality almost prove it the graveyard of the West Indies. The harbor of Carenage is a splendid and capacious one. The exports in 1835 were sugar, 50,215 cwt.;

rum, 14,051 gallons; molasses, 11,029 cwt.; coffee, 84,000 lbs. It was ceded to France in 1763, but afterwards retaken by England.

St. Vincent.—Area 85,000 acres; population 27,248 in 1844, of which 22,997 were blacks. One-third of the surface is in cultivation. Exports, in 1841, 110,205 cwt. sugar; 88,999 gallons rum, &c. The island, like others of the West Indies, has several times changed hands between France and England.

Tobago.—The interior lands have not been brought into cultivation, but are still forests. The island was colonized, first by the Dutch, and then by the Courlanders. It then changed hands twice between France and England. It is productive in every plant that grows in the Antilles. "Throughout the whole island there is but little social intercourse, as the inhabitants are scattered, and the roads, the greater part of the year, in such a state as precludes visiting. But most of the estates are advantageously situated, and the scenery around them picturesque and attractive. The variety of its trees, shrubs, flowers and vegetables, render it interesting to the botanist."

Virgin Isles.—These include the petty islands of Anegada, Tortola and Virgin Gorda. From Capadose's Travels, we extract the following sketch of Tortola, the most important of the group: "It is different in appearance from any of the other colonies, being an island of mountains; on the summits of several are large table lands well cultivated. The people live secluded lives, cultivating their own fruits and vegetables; feeding a few sheep and poultry; fishing or catching the wild ducks, which abound in all the mountain lakes on the island. I doubt whether this little island will ever rise above its present excellence; it is not adapted for colonization, and can be of but little value unless for a fortification."

Honduras and Guiana are included in the British West Indies, though not islands. *Honduras*, or Balize, is on the east coast of Central America. The climate is moist but healthy. The forests abound with the most valuable woods, mahogany, logwood, &c., the main products of the colony. The mahogany is a majestic tree, arriving at maturity in two hundred years! The trees are rafted down the rivers. Three logs have been sold as high in London as £3,000, according to McCulloch, the product of one tree! The logwood grows abundant in high grounds. In 1836, 28,313 tons shipping arrived and 29,493 tons departed. The only town is *Balize*, at the mouth of the Balize River, which has about five hundred houses. Great Britain received possession from Spain in 1670, but there were afterwards several contests about it. The colony is important, from its situation between Yucatan and Guatemala on the North American coast, for

* Sixteen years in West Indies, vol. i. p. 226, London, 1845.

military operations in this region. Its area is 16,400 square miles; 175 miles in length, and 110 in width. The British at one time even claimed the east shore of Yucatan, but surrendered the pretension in 1763. Yucatan still asserts confidently her rights to the *whole of Balize to the Mosquito Shore*. Population of Balize in 1845, 399 whites; 10,410 colored. Nothing is said to be requisite but the application of labor and capital to render it a most productive sugar country; and many other products exclusive of mahogany might be drawn from its soil and its forests. Laborers could be induced from Yucatan.

Guiana.—The British portion is most northward on the South American coast, and, with a shore of four hundred miles, includes about 76,000 miles of territory. Guiana is favorable for every tropical product. The inhabitants are aborigines, Dutch, English, Europeans, Africans, and are in number 82,-

924 negroes, 9,076 colored, 5,000 whites. The three departments are *Demerara, Essequibo and Berbice*, whose chief towns are Georgetown and New-Amsterdam. England contested for a long time the possession of Guiana with the Dutch, but finally seized upon it in 1803. Population in 1843, 120,000; produce same year:

Sugar	54,674,009 lbs.
Molasses	2,020,354 galls.
Rum	147,830 "
Coffee	1,924,000 lbs.

Since the *emancipation*, many estates have been abandoned. The governor, however, in his address of 1843, says: "A steady augmentation of population, &c., cannot fail to raise this magnificent colony to that high rank among the dependencies of the British crown, to which its extent, capabilities and fertility give it so just and natural a claim."*

EXPORTS OF GUIANA IN TEN YEARS.

Years	Sugar hhds.	Rum, punch.	Molasses hhds.	Coffee lbs.	Cotton bales.
1834	55,277	19,517	33,413	2,532,000	3,376
1835	67,248	27,147	27,160	3,278,930	2,319
1836	71,280	24,626	38,088	4,801,350	3,196
1837	62,520	17,602	31,429	4,066,950	2,510
1838	54,535	18,431	25,506	4,186,790	1,083
1839	38,444	16,071	12,134	2,003,250	1,364
1840	40,656	21,199	15,999	3,357,300	231
1841	34,199	11,118	16,179	1,088,670	170
1842	36,211	11,631	17,894	2,177,120	40
1843	35,938	8,296	24,957	1,428,100	24
1844	38,999	11,706	21,677	1,490,737	0

Bahama.—This group consists of several hundred islands, extending southeast six hundred miles between Florida and Hayti. They are of coral formation, scantily covered with soil, and mostly uninhabited. *New-Providence*, from its harb or, is the most important. It is the seat of government, and differs little in general appearance from the other islands. *Nassau* is the capital. The whole area of the islands is stated at 5,424 miles. Population in 1837, 19,948; two-thirds being black. The inhabitants are residents or wreckers. The latter are very numerous, and are daring navigators, who find constant employ from the dangerous keys, shoals and breakers by which they are surrounded. Number employed in agriculture, 3,590. Articles of product—corn, potatoes, yams, peas, beans, pineapples, cotton, ochre, cassada, pumpkins, arrow-root, oranges, limes, lemons. Dye woods are largely exported, and vast quantities of salt. Exports, in 1834, £92,802; imports, £142,021. The Bahamas were settled by the British in 1629. They were driven out by the Spaniards, who in turn were expelled. The French and Spaniards, combined, took possession in 1703. From that period till the cession to Britain in 1783, the islands were a famous rendezvous for pirates.

Bermuda.—This is a group of three hun-

dred and fifty small islands on the Atlantic, east of South Carolina. The population is

* The *Mosquito Territory*, for various reasons, and chiefly the alleged British interference in its policy and claims, has grown of sufficient importance to require an elaborate note. It extends westward from Spanish Honduras to the sea, with a most extensive coast. Honduras, asserting its independence, has maintained continual hostilities with Guatemala. The Spanish, it is asserted by McGregor, never subjugated or occupied Mosquito, though the British had long ago a fort and trading huts, which they were forced to abandon. The Mosquito Indians are spoken of in very high terms: "Their love of liberty, added to their natural bravery, impelled them to maintain, in sovereign independency, the possession of their mountains, valleys, woods, lakes and rivers, against the superior arms and arts of Spain." They have readily allied themselves with the English and look to them for protection. During the war in 1749, so important was considered the possession of the Mosquito Coast, that the British at once established a garrison there. The settlers, in hopes of a province being set up by the crown, began to cultivate the soil extensively. Eight of the settlers are said to have bought a large tract of land, seventy miles long and thirty broad. A system of government was established over them by the home government. These steps were regarded with jealousy by the Spaniards, and the two nations successively won and lost the mastery of the territory. In 1766, on the discussion of claims, the British ministry determined upon a surrender to the crown of Spain. There is sufficient proof that several parts of Mosquito are decidedly more salubrious than any other West India settlements. The supplies of cabinet woods of every sort are inexhaustible. Sugar, coffee, tobacco and indigo, could be advantageously

8,000, of whom half are black. *Hamilton* is the capital. The exports are arrow root, potatoes, onions, palmetto and straw hats. They have one hundred vessels engaged in the West India carrying trade. About one thousand barrels of oil are taken annually on the coasts.

EXPORTS AND IMPORTS FOR THE YEAR ENDING
JANUARY, 1847.

	Imports	Exports
From Great Britain.....	£52,072	£2,943
“ North America.....	2,199	207
“ British West Indies.....	3,681	7,024
“ United States.....	65,762	5,107
“ Foreign states.....	9,267	3,309
	£134,169	£18,592

Number of vessels entered in 1846, one hundred and ninety-four, of 25,686 tonnage inward, and one hundred and ninety-six, of 25,565 tonnage outward; 1847, one hundred and sixty-eight vessels, 19,962 tons inward, one hundred and sixty-six, 19,625 tons outward.

STAPLE PRODUCTIONS.

	1846.	1847.
Arrow-root.....	£8,084	£4,115
Onions.....	1,782	1,637
Potatoes.....	1,086	1,845
Oil.....	129	—

The exports of arrow-root and potatoes have been increasing very rapidly of late years.

Trinidad.—In the immediate vicinity of Columbia, and the most distant of all the islands from the United States is *Trinidad*, which, for commercial importance, is second only to Jamaica. Area about 2,000 square miles. The interior is uncultivated and almost unexplored. The soil is in general fertile, and is supposed sufficient to supply all England with sugar. One-thirtieth of the

cultivated. This is the British account of the matter.

The Mosquito Territory is considered by McGregor as “independent and under the protection and sovereignty of England;” which is much the same as to say, is an English possession. The present George, “king of the Mosquito shore and nation,” was educated, we believe, in England, and crowned May, 1845. The British government keep up a resident agency in the country.

Honduras and Mosquito, together, are three hundred and ninety-nine miles long, and one hundred and fifty wide; area, 48,500 square miles. An able historical and descriptive sketch has been written by Mr. Roberts. On a review of the whole, it is observed by McGregor, “it is evident that the Mosquito Territory is a most important region of America.” British subjects have settled in various parts. Mr. Walker, the resident agent, employs much of his time in endeavoring to improve the *morale* and condition of the creoles. An ensign and standard for the nation, were sent out to them from England. It would be well for the United States, whose policy is non-interference by Europeans on the American continent, to have a vigilant eye to the movements on the Mosquito coast.

surface only is capable of cultivation. In 1838 there were 184 sugar estates, with an invested capital of £2,000,000 sterling. A deficiency of labor has long been a serious drawback to the estates. Cocoa is extensively cultivated; asphaltum is found abundantly. The progress of the island has been chiefly since 1783. It has been held by the French and Spaniards as well as by the English. The population of Trinidad is stated as low as 39,000, and as high as 70,000, by different writers. There were, in 1840, 180 sugar estates, 104 distilleries on estates, 21,710 acres in cane, 6,910 acres in cocoa, 1,095 in coffee, 6,313 in provisions, and 7,237 in pastures.

Jamaica.—This most important of all the British islands, lies about one hundred miles south of Cuba, has an area of 6,250 square miles, and a population of 380,000, of whom, in 1835, 311,000 were blacks. Whilst the yellow fever rages on the low grounds, the elevated regions enjoy perfect health. The island is not generally fertile, but requires much culture. Indigo, coffee and cocoa, formerly much cultivated, have been given up. Every variety of tropical fruit and the most valuable dye and cabinet woods flourish. The European population are English, Irish, Scotch, French, German and Portuguese. But little of the island remains in the hands of the crown to be granted. The largest estates are about 1,200 acres, but it is impossible to procure a force to work them, as the freed negroes will only work a few hours each day, and a few days each week. Labor and rent are the chief subjects of agitation. The coffee estates have suffered less by emancipation, as Europeans cultivate them to an extent. But we shall refer to these things by and bye.

Jamaica was settled by the Spaniards in 1503, and remained with them till its conquest by England in 1655. In 1772 the exports were 11,000 hhds. sugar; in 1774, 78,000. The island suffered from the American war. The insurrection in St. Domingo stimulated the sugar production of Jamaica, which, in 1802, reached 143,000 hhds. The same may be said of coffee, which from 60,000 pounds in 1752, reached 19,311,000 in 1832. St. Jago is the seat of government, but Kingston the largest town.

From a letter of Dr. Binns to Lord Normanby, we learn that Jamaica is exposed to an easy conquest by a foreign power. Dr. Binns says:—“With a single steamer, carrying one thousand men and one long gun, incalculable mischief might be done ere the Queen’s troops could be got under arms, or the militia assembled. But with five thousand men, the island, in spite of the most gallant defence, must surrender.”

The imports in Jamaica in 1845 required 125,421 tonnage, being 12,000 tons greater than the previous year. The following are the imports of 1843 and 1844:

TABLE OF IMPORTS TO JAMAICA.

1814.	1843.
Flour—98,779 bbls., 2,802 half bbls.	66,239 bbls., 1,665 half bbls.
Corn Meal—26 puns., 22,156 bbls.	3 puncheons, 9,748 bbls.
Rice—1,369 trs., 235 half trs., 16,122 bags.	1,756 trs., 486 half trs., 9,069 bags.
Fish, Cod—3,897 hhds., 9,488 trs., 18,960 bxs.	5,421 hhds., 7,952 trs., 15,932 bxs.
Haddock—79 casks.	135 casks.
Mackerel—8,912 bbls.	23,643 bbls.
Alewives—4,696 bbls.	2,926 bbls.
Herrings—3,803 bbls.	2,853 bbls.
Salmon—281 tierces, 1,045 bbls.	408 tierces, 1,440 bbls.
Oil—1,928 casks.	2,647 casks.
Bread—16,305 bbls.	13,376 bbls., 216 half bbls.
Butter—15,441 firkins, 2,168 kegs.	14,782 firkins, 2,410 kegs.
Lard—6,001 firkins, 2,640 kegs.	10,214 firkins, 1,574 kegs.
Candles—15,366 bxs., 310 half bxs.	25,041 boxes.
Soap—46,323 bxs.	33,566 boxes.
Pork—24,629 bbls., 2,215 half bbls.	13,489 bbls., 1,039 half bbls.
Beef—1,312 bbls., 2,500 half bbls.	821 bbls., 1,170 half bbls.
Tongues—886 half bbls., 401 firkins.	1,519 half bbls., 256 firkins.
Brandy—3 pipes, 551 hhds.	401 hhds.
Wine—243 pipes, 469 hhds., 809 qr. casks.	112 pipes, 488 hhds., 1,362 qr. cks.
Tobacco—98 hhds.	54 hhds.
Corn—45,615 bags.	54,162 bags.
Salt—11 hhds., 883 tierces.	30 hhds., 1,032 tierces.
Lumber, P. P.—1,260,016 feet.	555,000 feet.
W. P.—2,044,581 feet.	2,170,488 feet.
Staves, R. O.—73,410.	350,963
W. O.—65,100.	212,740
Wood Hoops—213,170.	323,910
Shingles, Cedar—1,773,410.	2,228,090
Cypress—1,334,070.	1,182,670

SUGAR CROPS OF JAMAICA FROM 1790 TO 1846.

1790	91,131 hhds.	1809	114,630 hhds.	1828	101,575 hhds.
1791	91,051	1810	112,208	1829	97,893
1792	91,021	1811	138,292	1830	100,205
1793	82,136	1812	113,173	1831	94,381
1794	97,124	1813	109,158	1832	98,686
1795	95,372	1814	104,558	1833	85,101
1796	96,460	1815	127,209	1834	84,756
1797	85,109	1816	100,382	1835	77,970
1798	95,858	1817	123,766	1836	67,094
1799	110,646	1818	121,758	1837	61,505
1800	105,584	1819	116,382	1838	69,613
1801	136,036	1820	122,922	1839	49,243
1802	140,113	1821	119,560	1840	33,066
1803	115,496	1822	94,511	1841	34,491
1804	112,163	1823	101,271	1842	50,295
1805	152,352	1824	106,009	1843	44,169
1806	146,601	1825	72,090	1844	34,444
1807	135,203	1826	106,712	1845	47,926
1808	132,333	1827	87,399		

We have failed in obtaining any very late tables showing the gross amount of the trade of all the British West Indies with the rest of the world. The reader, however, under the head of each of the islands, will have found much to guide him in making a correct estimate. The following comprises the trade of the islands with the mother country during twenty years: and we shall see hereafter that the depreciation which is annually shown, has continued down to the present day:

TRADE OF GREAT BRITAIN AND COLONIES.

	Imports from Islands. Official value in £s.	Exports to Islands. Value in £s.	Declared value Exports in £s.		Imports from Islands. Official value in £s.	Exports to Islands. Value in £s.	Declared value Exports in £s.
1814 . . .	9,022,309	6,222,138	7,019,938	1825	7,932,829	4,997,270	3,866,834
1815	9,903,260	7,196,081	7,218,057	1826	8,420,454	4,047,694	3,199,265
1816	7,847,895	4,852,228	4,537,056	1827	8,380,833	5,017,375	3,683,222
1817	8,326,926	7,015,591	5,890,199	1828	9,496,950	4,461,071	3,289,704
1818	8,608,790	5,989,707	6,021,627	1829	9,087,923	5,521,256	3,612,085
1819	8,188,539	4,692,414	4,841,753	1830	8,599,100	5,040,677	2,838,448
1820	8,353,706	4,561,350	4,157,761	1831	8,448,839	3,988,266	2,581,949
1821	3,667,477	5,311,347	4,320,581	1832	8,168,668	4,100,426	2,439,807
1822	8,019,765	4,370,178	3,439,818	1833	8,008,248	4,704,180	2,587,591
1823	8,425,276	5,906,863	3,676,780	1834	5,410,113	4,818,646	2,680,022
1824	9,065,546	5,167,931	3,827,489				

EXPORTS FROM UNITED KINGDOM TO BRITISH WEST INDIES.

1840.....	£3,574,970	1844.....	£2,452,409
1841.....	2,504,004	1845.....	2,789,211
1842.....	2,591,425	1846-7.....	2,505,695
1843.....	2,882,441		

TRADE BRITISH WEST INDIES AND UNITED STATES.

Exports United States.

Fish oil and candles.....	\$33,699
Staves, &c.....	312,342
Masts and naval stores.....	3,916
Provisions and spirits.....	772,408
Horses and mules.....	215,902
Sheep.....	14,699
Bread stuffs.....	2,194,052
Rice.....	159,739
Tobacco.....	36,885
Gold and silver coin.....	6,100
Manufactures.....	287,782
Others.....	76,724

Domestic exports.....\$4,114,218

Foreign.....21,828

Total.....\$4,136,046

Imports United States.

Bullion and specie.....	\$345,294
Coffee, cocoa, &c.....	6,459
Copper and brass.....	42,430
Dye-wood.....	19,154
Mahogany.....	4,049
Wines, &c.....	4,785
Molasses.....	2,917
Sugar.....	22,206
Spices.....	38,699
Coal.....	765
Salt.....	99,693
Manufactures.....	16,497
Sundries.....	84,958

Total.....\$687,906

VESSELS OWNED IN BRITISH COLONIES, 1844.

Vessels	Tonnage	Crews	Vessels	Tonnage	Crews
Antigua.....55	533	220	Montserrat.....4	100	19
Bahamas.....140	3,252	686	Nevis.....11	178	45
Barbadoes.....37	1,640	305	St. Kitts.....35	546	114
Berbice.....18	854	89	St. Lucia.....19	913	132
Bermuda.....54	3,623	323	St. Vincent.....27	1,164	180
Demerara.....54	2,352	250	Tobago.....7	189	46
Dominica.....14	502	85	Tortola.....48	278	127
Grenada.....48	812	198	Trinidad.....61	1,832	378
Jamaica.....116	4,363	633			
			Total.....	7,304	592,839
					40,659

The most obvious distinction which exists between the British and other West Indies, is that which grows out of the relationship of its white and colored population, and the experiment some years in progress of cultivating the products of the tropics by *free negro labor*. This reflection opens to us the whole subject of EMANCIPATION, of which the world has heard so much, and in the discussion of which we shall learn more of the true condition of the islands than can be gleaned from any of our previous facts and statistics. We crave the reader's undivided attention.

Slavery is an institution as old as society itself. In the most glorious eras of letters and liberty, it was at its height. We find it throughout all the dark ages. In the middle of the nineteenth century, in the full blaze of Christianity, science and civilization, its progress is unchecked and even accelerated. Every attempt at suppression has signally failed. Abolition has been "as sounding brass." The natural increase of slaves falls little short, in the United States, of 100,000 per annum, and it is not venturing too much to assert, that, for every slave liberated by one nation, another has been imported by its neighbor from the coast of Africa. The imports into Spanish colonies, Brazil, South America, &c., are many thousands annually. The supply is thus kept equal to the demand,

and increases with it. There are perhaps as many slaves in the world, as the peculiar products which they are engaged in raising, and for which they only seem to be fitted, require. Emancipation is the measure of policy, when that number is temporarily too large. It is less heartless than the Spartan's extermination of his *helots*, but still mercenary, in that it is enjoying the laborers prime and dismissing him to want when he ceases to be valuable. Even were the negro entitled to his freedom, man is selfish, and will not give it to him, if it involves his pecuniary loss. Disregarding individual exceptions, the world has exhibited, as yet, no such benevolence.

It is doubtful whether men have not lost more than they have gained by abstract speculations upon liberty. The liberty of the uncivilized and barbarous man, is that of a wild beast. In the delirious excesses of unrestrained, unlimited liberty, men have proved themselves monsters, and shocked high heaven with their atrocities. Demagogues, fanatics, those upon whom all government, however regular, sits like fetters of steel, are loudest in their vociferations for liberty, which is to them a license for every bad passion. Its meaning with these is very different from what the true patriot and lover of country claims. We have no

faith here. In our opinion, no men, no nation of men, who were ever fit for true liberty, ever lost it. Dungeons, bolts and bars cannot confine—whips cannot tame its noble spirit. *The man who is a slave was never free!* We have no sympathy with the slave or the nation of slaves. They were made for that condition, or they would never occupy it. Their happiness and prosperity are in this state; or, having power, (for with this every creature of God is endowed,) they would break the fetter, or at least die! Let them be slaves, for freedom with such has no name, and would be a curse rather than a blessing. You could not enslave the North American Indian—he defies your bonds and dies free as his native air. You could not enslave the Anglo-Saxon—for this our fathers in the old and the new world have shown. Could slavery even be *tolerable* to me, I would pray God to continue me a slave. There is but one nation in all the world who will submit itself a willing, unresisting subject to slavery, *and that is the African!*

In every age of history the African has been a slave. His slavery began in his own country and to his own princes. The *lowest* rational being in the creation of God, next to the Hottentot, with capacities, mentally and physiologically considered, of the most groveling character, he has been the same in all ages and under all circumstances; with the identical characteristics in the cane-fields of Cuba as four thousand years ago in the streets of Thebes!* He does not repine, he does not rebel. Nothing higher incites him. He toils when he is bid, and ceases the very moment that constraint is removed.—If liberated and left to himself, he degenerates back to barbarism, from the civilization which slavery brought him. In the sight of every other people he is degraded, whether nominally bond or free. Social intercourse with him is impossible. His experiments in self-government have been hideous failures, as we shall see directly in considering Hayti. Throughout the British West Indies, he is a political cypher, and only kept in place by the influence of a powerful government. Sierra Leone and Liberia are experiments in the face of all experience. The former has already *failed*.

If a right to hold the African in bondage were in issue, though in fact the constraint comes from his own nature, and there were not the other strong, and, as we believe, irresistible arguments from history and the Bible, for it is unnecessary to lay any stress now upon the argument from policy, grow-

ing out of the condition in which whole communities find themselves placed, strong as that argument justly is, we would take the high ground, in view of every circumstance of his case, *that the negro was created essentially to be a slave, and finds his highest development and destiny in that condition.** Nor can I see in this a contradiction, or one ground to except to the wisdom and goodness of his Creator, whose ways are too far above mine to be perfectly comprehended. Happiness, for aught I know, may be the ultimate end; and whatever condition produces the most of this, right and good. As we are created with different intelligences little less than angels and idiots; with different constitutions, Hercules and imbeciles; in the frozen climates of the poles, where bread must be earned by struggles with terrible nature—or about the equator, where spontaneous fruits make earth a garden of paradise, so can I see no ground for presuming the *equality* of mankind. There is no argument *a priori*. If an argument be framed, it must come from *facts*, and all facts are opposed to the theory. Perhaps I had rather be a slave than an idiot, were it possible for my nature to be enslaved. Perhaps I had rather be a slave in the genial skies of the tropics, than a savage among tumbling icebergs or in the wilds of Africa; or perhaps nature, more kind and wise, may determine for me. I am so fashioned, however, as to decide beyond one question, the propriety of the existence of slavery, from the fact that it *has* existed in certain people, from the remotest periods of time, not only without resistance, but with ready acquiescence; that they have flourished under it, and become civilized and useful, and in every experiment, even under the most favorable circumstances, to alter their state, have manifested an utter incapacity for any other. A freeman myself, without any fine spun and impracticable notions of its *universal* propriety, I seek not to be wise above what is written, and am satisfied with the facts as they are given.

There never was, perhaps, a more systematic slave dealer than Great Britain—not even New-England—but, becoming suddenly afflicted with a sense of her wrongs, under the scourges of conscience, she took a turn and vowed henceforward the world should all be free. We make this charitable supposition of *conscientiousness* from the promptings of a liberal nature—for it is well known that *philanthropy* knocked a very long time at the doors of parliament before it was heard, and some have unkindly insinuated,

* The archaeological and hieroglyphical researches in Egypt clearly demonstrate this—vide Gliddon's Lectures; Dr. Nott, in Southern Quarterly Review, and Commercial Review, Nov., 1847; also Dr. Cartwright in S. Q. Review

* The reader will, if possible, read Dr. Cartwright's paper on the negro, in the Southern Quarterly Review; we forget the volume. He supports powerfully this position, as also does Dr. Nott, of Mobile.

was only heard when *interest* whispered your *West India possessions are not fertile enough to compete with foreign islands*. You have immense empires in the east, capable of unlimited production, which others have not. *Liberate your West India Slaves; force them, as you can then, to liberate theirs, and you have the monopoly of the world!* This has been insinuated, and the late importation of African apprentice (?) squints awfully at the practical *interest* view of the matter.

But let this be as it may. Great Britain liberated her slaves, and we are about to show, however uncharitable in us, that whether instigated by the highest benevolence or most sordid interest, she had absurdly blundered in her course, injuring every one that she would have benefited, and benefiting every one she would have injured.

In 1838 the fiat went forth that 800,000 slaves were freemen, and that in the sufferance of government, eight shillings in the pound value for every slave would be paid to his master. Thus by grinding taxation upon the laboring classes of England, was raised £20,000,000 to be applied to the purchase of £50,000,000 property, consecrated as such by law; and with little regard to the views of the property holders themselves, was secured emancipation. This was the first pecuniary cost. We shall see hereafter it was but a tithe of what had to be incurred.

There was an intermediate *apprenticeship* state established. Col. Capadose, who was in command of the forces when the news was received in the islands, gives us in his work a graphic sketch of the scene: "The negroes crowded round to hear the news, frantic; but when told of six years' apprenticeship, 'No six years, no six years,' they vociferated, beyond all bound of control. Explanations were vain. The police were called out and martial law contemplated. Every thing looked mightily like insurrection"—(this was in Trinidad,) "the negroes flocked to town and would not return to their masters, so that the magistrates were compelled to exert the power vested in them, and make some examples by having corporal punishment inflicted on a few of the strong and refractory men, which had the desired effect, and the apprentices returned to the estates."

However, slavery has ceased and apprenticeship has ceased, at least for the original blacks, and fifteen years have passed. We naturally desire to know the result of the experiment. It has surely had sufficient time to work. It has been tried under the most favorable auspices. Other nations have an interest in these results. France has, because her revolutionary government is on the eve of a similar movement. The United States have, for we have near 3,000,000 slaves; and some very wise and very hu-

mane men are ever urging us to set them free, to rove untrameled as they wist, over the wealthiest states of the Union. These gentlemen cannot, of course, object to our pointing to their own bantlings, emancipation and Hayti, in the West Indies, and receiving instruction from that quarter. It is but fair, too, that British writers should speak, whose prejudices would naturally induce them to give the most favorable account, even if there were American authorities to consult. On so interesting a point the reader will pardon our frequent and extended quotations. And first from the work of Col. Capadose, who was an officer sixteen years in the islands, published in London, 1845. We ought also to observe, that the writer is a great advocate for emancipation and the negroes.

"The greatest drawback to agriculture in the West Indies is the idleness of the negroes, who work only four hours in the day, and then, (notwithstanding the high wages they receive,) very negligently; three quarters of a dollar each per diem, or rather for four hours' superficial work, besides other advantages equivalent to one dollar, is what is usually paid to them. Many will not work at all so long as they have any money, and, upon the slightest word of reproach, quit the estate forever. My friends were in great anxiety, lest, through the misconduct of these wilful laborers, the crops of this year should be lost; and as every month increases their insolence, there was a worse prospect for the future."—Vol. i. 29.

"I could not see the machinery in operation, as nearly all the work people had left in consequence of a slight reprimand he had given them, for impertinence and disrespect to the gentleman, his assistant, who, being disturbed one night by their boisterous singing, dancing and noisy music, mildly requested them to go to a greater distance from his lodging. Instead of complying with his reasonable request, they told him he might go and sleep at the mill, for they should not move to please him," &c. &c.—Vol. i. 35.

"They (the negroes) are too indolent for so important an object; for, whilst they possess lands capable of enriching them in the highest degree, they simply cultivate what they require for present support—a small quantity of rice, cocoa, coffee, Indian corn, ground provisions, and some few of the tropical fruits. With property abounding with the finest trees and materials, their cottages are poor looking, miserable dwellings."—Vol. i. 39.

"The whole way I passed cocoa and coffee grounds, but not in good order, and offering a gloomy illustration of what I had

observed in the sugar estates, viz., the want of proper workmen. In these plantations it is the more extraordinary, as the labor is so light that children are capable of performing it; but the weeds are suffered to grow to a great height—even the gathering of the fruit is scarcely performed, a greater part being allowed to drop to the ground. Everything offers a cheerless contrast to the former flourishing state of the colony," &c. &c.—Vol. i. 45.

"But what a contrast was offered by the valley of Diego Martin; the estates looked abandoned, and the luxuriant cocoa, coffee and sugar which formerly gave so much beauty to the landscape were no longer seen; long brushwood had taken their place and everything wore a neglected aspect."—Vol. i. 80.

In relation to the negroes, Col. Capadose says:

"It is deeply to be regretted that the emancipated, and the people, generally, in the colonies, are averse to agricultural labor, and that the comparatively few who do engage in it, are so unreasonable in their demands. It is equally to be lamented that the free-born rising generation seem absolutely disinclined to any pursuits of that nature, even the cultivation of gardens."—Vol. ii. 250.*

The present value of estates:

"It is affirmed that very few proprietors of estates in the West India colonies, now clear the expenses attendant on their cultivation; yet, in some of them, such as Tobago, Dominica, Grenada, and others, the wages paid to laborers amount to less than what the maintenance, in all probability, of a similar number of slaves would have cost before the emancipation. The loss to proprietors in those colonies must, then, arise from the difference of labor performed from its present insufficiency—whilst the laborers have an easy mode of indemnifying themselves for the lowness of wages by the sale of their ground provisions, on which they can put what price they please."—Vol. ii. 255.

An able writer in the February number of *Blackwood*, 1848, paints in most fearful colors, the condition of the West Indies:

"Immediately after the emancipation act was passed, the produce of the West Indian estates began rapidly to decline, and their value to be correspondingly depreciated. This was the inevitable consequence of the abridgment of the working hours, and of the withdrawal of a great number of laborers altogether from plantation employment. In

fact, the want of adequate labor began to be felt most painfully throughout the colonies. Notwithstanding this, the planters went on, making every exertion they could, under peculiarly difficult circumstances.

"The increased expense, occasioned by the altered circumstances of the colonies, soon absorbed more than the compensation money which they had received; and in addition they were urged by government to provide more fully for the administration of justice, for the consolidation of the criminal law, for establishing circuit courts, amending the workhouse laws, improving the state of jails, for better prison discipline, establishing weekly courts of petit sessions, providing places of confinement for prisoners, raising an efficient police, &c.—things no doubt very desirable in themselves, but not to be accomplished save at a grievous cost, which, of course, was thrown entirely upon the shoulders of the planters. The following extract from the answer of the Jamaica Assembly, in reply to the governor's address, at the opening of that chamber on 4th August, 1835, will show the state of the colonies at the close of the year immediately subsequent to emancipation: 'Seeing large portions of our neglected cane-fields becoming overrun with weeds, and a still larger portion of our pasture lands returning to a state of nature; seeing, in fact, desolation already overspreading the face of the land, it is impossible for us, without abandoning the evidence of our own senses, to entertain favorable anticipations, or to divest ourselves of the painful conviction, that progressive and rapid deterioration of property will continue to keep pace with the apprenticeship, and that its termination must (unless strong preventive measures be applied) complete the ruin of the colony.'

"The following were the immediate and extremely natural consequences: 'There was no violence; the mass of the laboring population being left in quiet possession of the houses and grounds on the estates of their masters. For successive weeks universal idleness reigned over the whole island. The plantation cattle, deserted by their keepers, ranged at large through the growing crops, and fields of cane, cultivated at great cost, rotted upon the ground for want of hands to cut them. Among them the humbler classes of society, respectable families, whose sole dependence had been a few slaves, had to perform for themselves the most menial offices. Still the same baneful influence continued to rule the government. In all cases of difference the stipendiary magistrate supported the emancipated mass against the helpless proprietor, and even took an active part in supporting the demands of the people for an extravagant rate of wages, alike injurious to both classes.'

* Col. Capadose does, in several places, speak of the contentment of the negroes, and possession of physical comforts; but he is forced, at the same time, to throw himself upon the *name* of freedom, so dear; as he admits that they were "comfortable, happy, and well taken care of, in every way, when slaves."

"To the Editor of the Jamaica Despatch, Chronicle, and Gazette.

"Coming events cast their shadows before."

SIR—I have just returned from Lucea, where I have witnessed a sight any thing but gratifying to my feelings.

"A vessel has arrived from 'Trinidad de Cuba,' to load with the mill and machinery, coppers, and other apparatus from Williams-field Estate in this parish, late the property of Mr. Alexander Grant. The estate has, since Mr. Grant's death, been, from the difficulty of the times, abandoned; and Mr. D'Casero, the owner of the vessel now at Lucea, has purchased the fixtures for an estate settling in Cuba.

"Is not the fate of Jamaica estates foreshadowed in this circumstance? Is it not a melancholy reflection that we are being wantonly sacrificed by our fellow-countrymen, solely for the aggrandizement of foreigners!

"It does not require, Mr. Editor, a prophet to foretell the fate of Jamaica sugar properties, and that for every man's property des-

troyed here, half a dozen will flourish in Cuba. A new branch of trade is opened to us, and, for a few months, no doubt, it will be a brisk one. I would strongly recommend gentlemen who are advertising properties for sale to send the advertisement to Cuba; an estate now is not worth more than the cattle and machinery on it, and our neighbors in Cuba might obtain all the machinery necessary for the settlement of their sugar plantations on very easy terms; and it will be, no doubt, exceedingly agreeable, at some future time, when necessity compels us to quit our own country, to seek a living in Cuba, to see our late still, steam-engine, or coppers, and if we are particularly fortunate, obtain the superintendence of any one of them. I am, Mr. Editor, your obedient servant.

A PROPRIETOR.

"Hanover, Oct. 23, 1847."

"The destructive results to property, by the changes thus precipitately forced on the colony, will be best manifested by reference to the exports of our three great staples—sugar, rum, and coffee:

	Hhds. sugar at £20.	Punch. Rum at £10.	Pounds Coffee at 60s per 100 lbs.	Annual Value.
Average of the five years ending 1807, last of the African trade.....	131,962.....	50,462.....	23,625,377.....	£3,852,621
Average of the five years ending 1815, date of Registry Act.....	118,490.....	48,726.....	24,394,790.....	3,588,903
Average of the five years ending 1823, date of Canning's Resolutions.....	110,924.....	41,046.....	18,792,909.....	3,192,637
Average of the five years ending 1833, last five of slavery.....	95,353.....	35,505.....	17,645,602.....	2,791,478
Average of the five years ending 1843, first five of freedom.....	42,453.....	14,185.....	7,412,498.....	1,213,284

"Up to 1807, the exports of Jamaica progressively rose as cultivation was extended. From that date they have been gradually sinking; but we more especially entreat attention to the evidence here adduced of the effect of emancipation, which in ten years, reduced the annual value of the three principal staples from £2,791,478, to £1,213,284, being in the proportion of seven to sixteen, or equal, at five per cent. to an investment of about thirty-two millions of property an-

nihilated. We believe the history of the world would be searched in vain for any parallel case of oppression, perpetrated by a civilized government, upon any section of its own subjects.

"In other places the alteration and decline has been even more startling. The following table exhibits the state of exports from British Guiana, at intervals of three years, beginning with 1827, and ending as above with 1843:

Year.	Sugar, hhd's.	Rum, punchons.	Molasses, casks.	Cotton, bales.	Coffee, lbs. Dutch.
1827.....	71,168.....	22,362.....	28,226.....	15,904.....	8,063,752
1830.....	69,717.....	32,939.....	21,189.....	5,423.....	9,502,756
1833.....	63,415.....	17,824.....	44,508.....	3,699.....	5,704,482
1836.....	57,112.....	21,262.....	37,088.....	3,196.....	4,801,352
1839.....	38,491.....	16,070.....	12,134.....	1,364.....	1,583,250
1843.....	35,738.....	8,296.....	24,937.....	24.....	1,428,100

These, then, at first blush, are the fruits which have been abundantly reaped, and there is little to hope for in the future, despite of all the efforts which the returning reason of the mother country annually puts forth. To us, it is too plainly manifest, the doom of the British West Indies is irrevocably sealed.

The Hon. John C. Calhoun, when Secretary of State, in 1844, dispatched, we be-

lieve, a private agent to the West Indies, in quest of information for the department, and with the results before him, produced that celebrated letter to Mr. King, which did so much in opening the eyes of France and other nations. The strong yet truthful colors in which the condition of the colonies are developed, warrants an extract in our pages.

"The experiment, &c., has turned out to be a costly one. She has expended nearly one hundred millions of dollars in indemnifying the owners of the emancipated slaves. It has been estimated that the increased price paid since, by the people of Great Britain, for sugar and other tropical productions, in consequence of the measure, is equal to half that sum; and that twice that amount has been expended in the suppression of the slave trade—making together, two hundred and fifty millions of dollars as the expense of the experiment. Instead of realizing her hope, the result has been a sad disappointment. Her tropical products have fallen off to a vast amount. Instead of supplying her own wants and those of nearly all Europe, with them, as formerly, she has now, in some of the most important articles, scarcely enough to supply her own. What is worse, her own colonies are actually consuming sugar produced by slave labor, brought direct to England, or refined in bond, and exported and sold in her colonies as cheap, or cheaper, than they can be produced there; while the slave trade, instead of diminishing, has, in fact, been carried on to a greater extent than ever. So disastrous has been the result, that her fixed capital vested in tropical possessions, estimated at the value of near five hundred millions of dollars, is said to stand on the brink of ruin.

"But this is not the worst. While this costly scheme has had such ruinous effects upon the tropical productions of Great Britain, it has given a powerful stimulus, followed by a corresponding increase of products, to those countries which have had the good sense to shun her example. There has been, it is estimated by them, invested in the production of tropical products, since 1808, in fixed capital, nearly four thousand millions of dollars, wholly dependent on slave labor. In the same period, the value of their products is estimated to have risen from about \$72,000,000 annually, to nearly \$220,000,000, while the whole of the fixed capital of Great Britain vested in cultivating tropical products, both in the East and West Indies, is estimated only at about \$830,000,000, and the value of the products annually, at about \$50,000,000. To present a still more striking view: of three articles of tropical products—sugar, coffee, and cotton—the British possessions, including the West and East Indies, and Mauritius, produced, in 1842, of sugar, only 3,993,771 pounds, while Cuba, Brazil, and the United States, excluding other countries having tropical possessions, produced 9,600,000 pounds; of coffee, the British possessions produced only 27,293,003 pounds, while Cuba and Brazil produced 201,595,125 pounds, and of cotton, the British possessions, including shipments to China, only 137,443,446 pounds, while the

United States alone produced 790,479,275 pounds."—*Senate Documents*, 1844.

But let us go a little into the details of these emancipation movements, and of those, the necessary sequence, demanded by the condition of the islands—protests upon protests, petitions upon petitions, committees in parliament, and reports, navigation and tariff laws, crimination and recrimination, by parties and ministers, in one continued, uninterrupted series.

The colonists deserve the fate they have suffered. They were deluded with open eyes into an assent to a scheme which they at least should have known to be impracticable. The alluring promises so liberally made, have not been kept. Indeed, no government could be supposed absurd enough to keep them, if it had the power. There is a point beyond which men will not endure *taxation*, and they are reaching it. Let the colonist partake of the bitter fruits of *his* fanaticism without complaint. He could have averted the evil. He should have placed his foot upon the imprescriptible rights of a British subject, and resisted the encroachment. *Magna Charta* and the constitution of parliament were the bulwarks of his *property* as his *person*. The power was his to have defied and resisted, even unto death. We admit the difficulties of the position, but he should have been firm and unmoved. To him the negro's character was familiar; and let us ask, what slaveholder of South Carolina, Mississippi, or Louisiana, even if ignorant of the results in the West Indies, would hesitate a moment about the availability of *free* black labor in any department of tropical agriculture? We shall see, now, the same confessions wrung from British lips. The extract is from Blackwood, for February, 1848:

"The negro is more fully alive, perhaps, than any other class of mankind, to the luxury of undisturbed idleness. He has few wants, and those few are easily supplied in such a splendid island as Jamaica, where his provision ground, with the smallest possible amount of cultivation, will afford him the necessities and some of the luxuries of life. What he cannot raise for himself, must of course be obtained by labor; but a very slight portion, indeed, of the primal curse now lights upon the emancipated negro, who has no ambition, and, consequently, no motive to persevere.

"It has been perfectly well ascertained, that the constitution of Europeans will not admit of their pursuing out-door labor in a tropical climate; and, therefore, white labor is out of the question. The natives of Madeira, indeed, have been tried, but they are unfit for the work; and even were it otherwise, the supply from that quarter is limited. Coolies were brought out from the East In-

dies at an enormous expense, equal to two-fifths of their wages, for a period of five years. It is well known, that of the last lots of Portuguese and Coolies (those of 1845-6), nearly one-half have been, since that period, on the sick list, most of them not seriously ill, but in that feeble and inert state which change of climate is apt to produce.

"From all this, and from the experience of centuries, it is evident, that the African alone is physically suited to undergo with ease and without danger, the fatigue of field labor in the climates which are suited for sugar cultivation. We shall presently allude to the obstacles which have been thrown in the way of obtaining a supply of free labor from that quarter; and we think we shall be able to convince the most scrupulous reader, that the line of conduct adopted by the pseudo-friends of the African, is one most admirably calculated to foster the state of barbarism, cruelty, ignorance, oppression and crime, which is the melancholy characteristic of the inhabitants of that unhappy country."

Let these stubborn facts rebuke the presumptuous interference of those in certain sections of our own Union, with the institutions of other sections, about which they are practically as ignorant as was the British nation of the character of the people they set loose upon the world. Shall the momentous experiment, made under such auspicious circumstances, result less disastrously when made under circumstances infinitely more unfavorable? The negro, by nature, is fierce and ungovernable, and submits to exertion under pressure only of the greatest exigencies or constraint. His aspirations are gross and sensual. Satisfy these, and he will bask in the sun, and doze away life in stupid insensibility. To suppose such a people capable of self-government, and of accommodating themselves to all the regulations and duties of a civilized state of society, is a monstrous assumption.

One act of palpable iniquity is brought home upon the British government. After forming a solemn compact with the master, to allow him *six* years of labor, termed *apprenticeship*, in his slave, and a certain sum of money, in consideration of his after freedom, the parliament of England, in its infinite highness, undertook to dissolve this compact by abridging to *four years* the service of the negro! But

"The way found prosperous once,
Induces best to hope of like success."

Among the earliest complaints of the planters were, that they were neglected by the home government;—that no facilities were afforded for the introduction of apprentices [!] from Africa or the East Indies; but, on the contrary, impediments imposed. The last complaint amounts to this—contracts

made with such apprentices in their native country are of no force. They must be made in the colony; this is plain. A contract made with a barbarian, in his native wilds, would have few points in the barbarian's favor. He understands equally well, the title of slave and apprentice!

The complaints were disregarded, and the planters allowed the full protection for their products, enjoyed up to 1834, viz.: a differential duty of twenty-one shillings per cwt., imposed in their favor, upon all sugars imported into England from foreign countries.* For this much they were to submit to the following restrictions. We extract from the *London Economist*:

"1st, They were confined to the British markets for their supplies of lumber, food and clothing; 2dly, They were prevented importing fresh labor, under what we always deemed an unworthy suspicion—that immigration would degenerate into a slave trade, and immigrant labor into slavery; 3dly, They were precluded the privilege of sending their produce to Europe in any but British ships, which not unfrequently entailed an extra cost of two to three pounds a ton upon their sugar; 4thly, And at home, out of regard to the landed interest, their rum was subjected to a high discriminating duty in favor of British-made spirits, and their sugar and molasses were entirely excluded from our breweries and distilleries."

In 1844 an innovation was made, by rendering the duty dependent entirely upon the place of growth, viz.: in *free* or *slave* countries. In 1846 this distinction was entirely abrogated, and a scale adopted for the final and early introduction of all sugars, upon a common footing; a measure of whig policy, induced by the growing popularity of free trade doctrines. The differential duty for 1846, was six shillings per cwt.; in 1850 it is to be *nothing*.

The effect of this tariff arrangement has been, as stated by Mr. Calhoun, to stimulate, in an extraordinary degree, the growth of slave sugar; which in Cuba, within a few years, from 60,000 per annum, has swelled to over 200,000 tons. The same may be remarked of Louisiana and other countries. This competition must be met by the British colonies, with all the fetters of their navigation laws. They are even told that Havana sugars are worth five shillings the hundred more in point of color and strength, growing out of superior working.

A writer in Blackwood gives some interesting statistics of the cost of producing sugar in the different islands:

"'From many calculations,' writes a highly intelligent and experienced correspondent, 'the lowest rate at which sugar can be pro-

* Thus the duty on colonial sugar was £1 4s.; on foreign, £3 3s.

duced, is about twenty shillings per cwt., on the average, or twenty pounds per ton. No doubt some estates may, and do, grow it cheaper than others. They may have advantages of situation, both in regard to weather and command of labor; but one thing I am certain of, that no number of estates taken collectively, can grow it much under twelve shillings.

Cost of production in slave countries, per ton.....	£12	0	0
Add duty £1 per cwt.....	20	0	0
Cost, irrespective of freight.....	£32	0	0
Cost of production in free labor colonies.....	£20	0	0
Add duty 14s. per cwt.....	14	0	0
Difference of value between slave and free sugar, at the lowest estimate, or 3s. per cwt.....	3	0	0
Cost, irrespective of freight.....	£37	0	0

The following statistics show the depreciation in value of a few leading estates:

"In 1838, the value of the estates, owing to the want of labor, had fallen from one-third to a half. The following is the account of some of the estates:

	Price in 1838.	Former price.
Anna Catherina estate.....	£30,000.....	£50,000
Providence.....	38,000.....	80,000
Thomas.....	20,000.....	40,000

In 1844, the depreciation became greater. Here are a few examples:

Rome and Houston estate.....	£40,000.....	£100,000
Success.....	30,000.....	55,000
Kitty.....	26,000.....	60,000
William.....	18,000.....	40,000

"In 1844, the Groenveldt estate, formerly valued at £35,000, was sold for £10,000. In 1845, the Baillie's Hope estate, formerly valued at \$50,000, was disposed of for £7,000. And in 1846, the Haarlem estate went for £3,500, whereas its previous value was not less than £50,000."

The cry of the planters is now for higher protection, and resounds every where in the colonies and with terrific force in parliament. Ten shillings on the cwt. of sugar is the lowest amount which they consider consistent with the further existence of the colonies! Will their demands be met? For the interests of sound government we hope not.

What right have the planters to expect a restoration of the old sugar duties and even higher ones, with all the support of the high friends they have in England! Shall the power of taxation be given to *them*? Were the government of Lord John Russel to make a sudden summerset and find itself supported in the popular sympathies of England, a thing almost impossible, it might be considered an act of *magnificent benevolence*, upon the part of a *generous* nation, submitting itself to onerous taxation; never an act of *justice* accorded to whom it was *due*! Does it not

involve an absurdity to suppose that in the compact with the slave owner he was to be allowed *forever* afterward to dispose of his products in the London markets at much higher, even *double* their true valuation, as regulated by supply and demand throughout the world? We say *forever*—for, if with nearly twenty years of protection under the emancipation, he has been sinking lower and lower, when in the name of heaven will he be able to stand alone? Is it not a vain struggle against the power of nature and circumstances? The monstrous folly of submitting *forever* to such an outrage upon trade and enterprise, could not for a moment have entered the minds of the English people, however deluded in other respects—an outrage without equivalent—unmitigated wrong—support to a tottering and baseless fabric!

But we have no time to continue any further our asseverations here, but must pass to concluding sections of the article.

4. *Dependencies of Holland.*—The three islands of Saint Eustatia and its dependencies, Saba, St. Martin and Curacao, are the property of the Dutch, who have never made any considerable figure in the western world.

Saint Eustatia is in circumference thirty miles, and has an area of one hundred and ninety square miles. Its appearance from the sea is that of a conical mountain, though much of its surface is level and covered with vegetation. Tobacco is an important product, but sugar, cotton, indigo, provisions and stock, are exported. Having been the centre of immense contraband trade during the war, Admiral Rodney is said to have taken with the island £4,000,000 booty. The commerce and prosperity of St. Eustatia have declined. The product of sugar now is only about 1,000 barrels, and the population has decreased from five thousand whites and fifteen thousand slaves, to three or four hundred whites and about two thousand slaves. *Saba* is altogether unimportant. The island was settled by the Dutch in 1635; it has since changed hands with France and England, and finally given to Holland, in 1814.

Saint Martin.—This island was originally settled by the French and Dutch, and is divided between them—the French part being attached to Guadaloupe and embracing a population of six hundred free, and three thousand slaves. The Dutch population is about equally numerous. They each produce about 25,000 cwt. of sugar and 130,000 galls. of rum. The whole area of St. Martin is only thirty square miles. Salt is largely produced.

Curacao, the largest of the Dutch islands, contains an area of eight hundred square miles and thirteen thousand five hundred in-

habitants, of whom three thousand are white, five thousand five hundred free colored, and five thousand slaves. Sugar and salt are the great staples. Its capital is Williamstadt, a well-built town, governed by a stadtholder. The English had possession in 1807. In common with all the Dutch colonies, the expenses are much greater than the revenue.

The Dutch have, also, a portion of *Guiana*, on the South American coast, called *Surinam*, from the name of its capital. There are one thousand and fifty estates of sugar, cotton, coffee, indigo, cocoa, &c. It is said that the government in Holland in 1842, appointed a commission to determine the best mode of extinguishing the institution of slavery in the colonies; and the governor told Col. Capadose, in 1445, the only thing that prevented the Dutch government from acting, was the want of means to compensate the great losses which would result to the planters. The population, in 1840, was 9,475 free, 46,908 slaves, and 6,300 friendly bush negroes. Export, 1841:

Sugar.....	31,386,646 lbs.	
Coffee.....	1,958,840	
Cotton.....	1,467,070 "	
Molasses.....	1,020,258 galls.	
Rum.....	82,374 "	&c.

5. *Dependencies of Denmark.*—*St. Thomas* was settled by the Danes, in 1672, and contains thirty-seven square miles. The soil is not productive, and sugar and cotton but little cultivated. Population, five hundred whites, one thousand five hundred free, five thousand slaves. The island was twice in the hands of Britain. Its chief town is a place of great activity, and spreads over considerable extent. "Vessels from all parts are seen in the harbor, persons of all nations in the streets, and languages of every kind heard in the hotels and public places." Population by one account 12,000. "The real history of the island," says a writer in *Colonial Magazine*, "is unwritten; but that it has been the scene of more atrocities, and the refuge for more outlaws than any other ocean isle, is certain." The sales of merchandise in *St. Thomas* are vast. Goods are landed duty free, which enables it to command the trade of the islands and of South America. The slave trade is carried on here. "Long, low, black schooners," says an English account, "were notoriously fitted out in this harbor, within the present century, but these vessels had secret owners, accessories and agents here, while their bloody flag infested these seas."

IMPORTS OF ST. THOMAS, 1840.

From Great Britain.....	\$2,110,000
" France.....	640,000
" Hamburg, &c.....	960,000
" Bremen.....	199,000
" United States.....	968,000
" Other places.....	133,000
	<hr/>
	\$4,997,000

Spanish, American, and West India arrivals in 1840, 1,568 vessels; 48,024 tonnage.

Santa Cruz.—From a sketch by Thurlow Weed, we learn that the English and Dutch took possession in 1625; that the latter were expelled in 1649, and the former destroyed by the Spaniards the following year. The French again received possession in 1661, but transferred it in 1663 to the "Knights of Malta." The French abandoned the island in 1720, for *St. Domingo*, but returned again and sold it to the Copenhagen merchants for £30,750, who sold it to the king of Denmark. The English in 1801 and 1807 seized upon the island. Its area is eighty miles. Population in 1841, 3,200 whites, 30,000 slaves. The product of sugar, coffee, cotton, and indigo have declined. In 1800 there were produced 40,000 hhds. sugar, and 20,000 puncheons rum; in 1846 about 20,000 hhds. sugar, and 14,000 puncheons rum. *Christiansted* is the principal town, and has five thousand inhabitants. The English language is mostly in use. The island, in common with the others, is under a governor-general. The code of Christian V. is in force. The slaves in all the Danish colonies are in course of gradual emancipation.

Saint John is the remaining Danish island, and is thirteen miles long and six broad. It is unimportant.

6. *Dependency of Sweden.*—*St. Bartholomew.*—Area twenty-five square miles; population six thousand blacks, two thousand whites. It is abundantly fertile in sugar, cotton, tobacco, &c., &c., &c.

7. *Hayti.*—Notwithstanding the contrary desire, we must be content with a brief reference to Hayti, which, indeed, furnishes in its history the materials for whole volumes. The world has seen with astonishment, and we trust with profit, the crimes which have been committed, and the ruin which has resulted, in a land once blessed with sound government and unexampled prosperity. We doubt if history presents any parallel, where the sanctions of freedom and independence have been given for so long a period, to a reign of guilt, terror, and devastation. Fearful is the responsibility of those who applied the incendiary torch to such materials.

The area of Hayti is 29,500 square miles, and its population about 700,000, of which one-tenth part only are whites and colored. One-half of the island came into possession of France in 1691, by cession from Spain.

Unexampled prosperity crowned the efforts of the French in the island, up to that period, when the convulsions at home, induced by the revolution of 1790, began to extend their influences. The Assembly in Paris proclaimed "universal freedom," and the blacks in the colony caught up the cry, and prepared for the dreadful orgies of blood.

The world has been abundantly satisfied, that all the horrors of the insurrection which

ensued, are attributable to the fanaticism of the popular leaders in France sustained by certain abolition societies in England, and the irresolution and mistaken policy of the colonial authorities in the island. But for these, the negro had remained content and happy, and mankind been spared the dreadful drama enacted by him.

We may, at some other time, go into the minutiae of these movements, and furnish the reader an unvarnished narrative. The picture should ever be present in the minds of the south and of the north, that our country may be spared the repetition of the tithe only of these crimes. There is something terrible, if we may judge from its fruits, in the very title *amis des noirs*, "friends of the blacks," by whomsoever worn. The zeal

and sincerity, yet indiscretion of these men, lead them to rush on where angels might hesitate a step. Well might even the negrio himself pray to be saved, harmless, from his friends. Hereafter, when we speak of Hayti, we shall refer, with full particulars, to all the movements in behalf of the African—*Sierra Leone and Liberia colonization and abolition*—and exhibit them in their true colors.

We pass over the tumultuous and revolutionary history of Hayti, since its independence, down to the present moment, when conflicting armies are in the field, and the catalogue of crimes in the annals of Dessalines, Christophe, Petion, and Boyer, successive presidents and despots.

The following table shows more than all language can, the decline and fall of Hayti:

EXPORTS FROM HAYTI, 1789, 1801—1841.

	Clayed Sugar. lbs.	Muscovado. lbs.	Coffee. lbs.	Cotton. lbs.
1789.....	47,516,531	93,573,300	76,835,219	7,004,274
1801.....	16,540	18,518,572	43,420,470	2,480,340
1818.....	198	5,443,567	26,065,200	474,118
1819.....	157	3,790,143	29,240,919	216,103
1820.....	2,787	2,514,502	35,137,759	346,839
1821.....	—	600,934	29,925,951	820,563
1822.....	—	200,454	24,235,372	592,368
1823.....	—	14,920	33,802,837	332,266
1824.....	—	5,106	44,269,081	1,028,045
1825.....	—	2,020	36,034,300	815,697
1826.....	—	32,864	32,189,784	629,972
1835.....	—	1,097	48,352,371	—
1836.....	—	16,199	37,062,674	—
1837.....	—	—	30,815,400	—
1840.....	—	741	46,126,272	922,575
1841.....	—	1,363	34,114,717	1,591,454

Well does Mr. McGregor remark, and with this we close: "What the destiny of Hayti may be, we will not attempt to determine, further than the revolutions of 1842, 3, 4, 5, and 6—the expulsion of President Boyer—the atrocities committed by the negroes on the colored races—the contests and distractions between the former political men on the island—the insecurity which prevails—the

non-payment of the instalments of indemnity to France—the neglect of agriculture—the consequent want of products for trade, and the lax morals and indolence of the population, are all subjects, when deliberately considered, that do not leave us much good to hope for in the prospects of Hayti."

The history and statistics of the West Indies will be completed in another volume.

APPENDIX.

CANADIAN COMMERCE.—The value of merchandise imported from each country in each of the past three years, was as annexed:

	1849.	1850.	1851.
Great Britain...	£1,669,002.	£2,407,980.	£3,012,033
N. A. Colonies...	48,913..	96,404..	109,243
West Indies...	3..	1,112..	3,400
United States...	2,242,855..	1,648,715..	2,091,441
Other foreign countries....	41,824..	91,393..	142,574

From this table it appears that, taking the three years inclusively, the importations have increased from Great Britain at the rate of about 70¹/₂ per cent.; from the United States at the rate of about 60¹/₂ per cent.; and from the North American colonies at the rate of about 123 per cent.

There were built during the year in Canada four steamers of 450 tons, and sailing vessels of 42,649 tons.

The following are the numbers and tonnage of foreign vessels entered at Quebec and Montreal in 1851:

EXPORTS OF PRODUCE FROM CUBA.

	1846.	1847.	1848.	1849.	1850.	1851.
Sugar.....boxes.....	987,742	1,274,511	1,228,718	1,090,884	1,249,663	1,437,056
Rum.....pipes.....	9,032	19,432	16,339	11,640	11,825	10,168
Molasses.....hdls.....	203,597	252,810	228,726	246,570	269,044	400,000
Coffee.....qtls.....	204,415	233,038	173,534	219,284	130,035	117,032
Tobacco.....".....	88,260	98,195	62,756	40,191	79,784	75,791

Almost the sole increase in these productions is in sugar, and the chief market for that production is the United States. The following are the importations into the United States, compared with the Cuba production, assuming 400 lbs. to the box:

	Cuba product lbs.	Cuba imp't into U. S. lbs.	Cuba export to other countries lbs.
1846...	395,096,800	61,624,973	333,471,827
1847...	509,924,400	169,274,024	340,650,376
1848...	491,487,200	174,979,362	316,507,838
1849...	436,353,600	179,754,020	256,599,580
1850...	499,845,200	127,767,543	372,077,657
1851...	574,822,400	275,327,497	299,494,903
Total 6 yrs }	2,907,529,600	988,727,419	1,918,802,181

In 1846 the United States took less than one-fifth of the quantity sent to other countries, but in the six years averaged about one half as much, but in the year 1851 they took one half the whole quantity, notwithstanding a very large production in the United States, reaching for the present year, 257,138,000 lbs. Cuba in 1851 exported to the United States as much of her chief product as she did to all the rest of the world. It is evident from this fact alone that neither the island nor the Spanish Government can afford to lose such a customer. All that makes Cuba valuable to the court of Madrid is the money that can be extracted from it, and the amount of that money depends upon the quantity of sugar that the United States purchase. Yet the chances are that she will lose that market as she lost the coffee market, by perseverance in a system of taxes, which might have answered a century ago, when Cuba had an entire monopoly, but which are simply insane in the present state of commercial intercourse

	No.	Tons.
United States.....	35	20,062
Norway.....	47	17,640
Prussia.....	21	7,667
Russia.....	8	3,668
Sweden.....	3	989
Mecklenburg.....	2	478
Hanover.....	1	212
Totals.....	117	50,716

CUBA TRADE—1846-52.—The condition of Cuba is such as to point out to any reasonable person the necessity for a great and prompt change in the management of its affairs. Of late years the department of industry in other countries which rival Cuba in her productions, has been such as to make the burdens imposed upon Cuban planters annually more onerous, notwithstanding the increased quantities produced. The following are the quantities of leading articles exported from the island for the last five years:

throughout the world. We may take an actual transaction to illustrate the impossibility of continued intercourse—thus a person ships, say 200 bbls. of flour, costing \$5.50, or \$1,100, to Cuba, with orders to invest the amount in coffee for return; the accounts will stand thus:

Sale of 200 bbls. flour at \$17.....	\$3,400
Charges—	
Duty.....	\$2,020
Freight.....	157
Landing and cooperage.....	14
Commission 2 ¹ / ₂ per cent.....	44
	<hr/> 2,235
Proceeds.....	\$1,165
Invested in 100 bags coffee, 16,470 lbs, at \$5 per 100 lbs.....	\$823 50
Invested in bags, 5 rials each.....	62 50
	<hr/> \$886 00
Charges—	
Export duty, 63 ¹ / ₄ cents per 100 lbs.....	\$104 01 ¹ / ₂
Brokerage ¹ / ₂ per cent.....	4 03 ¹ / ₂
Marking, weighing and cart- ing.....	12 04
Bills lading.....	1 00
	<hr/> 122 01
	<hr/> \$1,008 01
Commission 2 ¹ / ₂ per cent.....	25 01 ¹ / ₂
Net.....	\$1,033 02 ¹ / ₂

Out of an investment of \$1,000 in the United States, the Cuba government gets \$2,124 31, or very nearly 200 per cent. taxes. Take now the comparative production of Cuba and Brazil, and the quantity bought of each by the United States.

1838		1851	
Product.	Sold to U. States.	Product.	Sold to U. States.
Cuba..... lbs.	40,261,025.....	11,703,200.....	3,099,084
Brazil..... "	170,208,800.....	303,556,960.....	107,578,257

Thus, Cuba has lost a trade which the Brazils have gained. Coffee has been in all this time free of duty in the United States, and the Cuba sales have perished under the weight of Cuban taxes. In relation to sugar, the diminished duty in the United States under the present tariff, served to open a market for the increased products of the island, at a time when the growth of beet-sugar on the Continent, and the increase of East India sugar, counteracted the diminution in the West India supply cut off through emancipation, &c. The production of sugar now in St. Domingo, the British West Indies, Brazil and United States, is receiving a more regular development, and with it the dependence of Cuba upon the United States for a market will gradually become more marked, and the present commercial system cannot be maintained. The position of the island is in some degree analogous to the manufacturing sections of England—as long as they had the monopoly of supplying the world with manufactures they could afford to tax the producer to any extent, for the benefit of the government, and other classes. As soon, however, as other countries began to rival her manufactures, it became necessary to reduce the cost of manufacture by removing taxes. Cuba is losing her monopoly in tropical produce, and can no longer afford to pay over \$30,000,000 per annum for the support of the Spanish throne. On purely economical principles, the continuance of Spanish authority in Cuba much longer is impossible. The cessation or modification of that authority will develop the same state of things as at the north. If

Canada and Cuba do not send representatives to Congress, and thus enter politically into the Union, they must, in spite of themselves, enter commercially into the Union by free trade reciprocity.—*U. S. Economist.* (See West Indies.)

COAL TRADE OF PENNSYLVANIA.—*From the Statistics and Tables of C. G. Childs, Esq.*—Pennsylvania contains an area of 46,000 square miles, of which upwards of 15,000 square miles, or about one third part of the state, is coal lands, principally lying above or near the water level. England, Scotland, Wales, and Ireland combined, according to the best authorities, contain only 11,000 square miles of coal, in an area of 120,000 square miles of territory. This coal in many cases lies from 900 to 1,800 feet below the surface of the ground, and is raised by machinery. In relation to the quantity of iron ore, nearly the same relative proportions exist between Great Britain and Pennsylvania. It will thus be seen that in these articles of the first necessity, and indispensable to a state of civilization, our state possesses three times as much as all Great Britain.

If to the anthracite coal trade of Pennsylvania, the bituminous coal mined in the state be added, (believed to exceed 1,300,000 of tons in 1851,) the total quantity would be about 6,300,000 tons, worth at tide water \$3 40 per ton, and we have a total of TWENTY MILLIONS OF DOLLARS as the value of our coal trade for the year 1851.

Table showing the Quantity of Anthracite Coal sent to Market annually, from its commencement in 1820 to 1850, inclusive.

Years.	Total Lehigh. Tons.	Schuyl-kill. Tons.	Little Schuyl'k'l. Tons.	Total Schuyl'k'l. Tons.	Lacka-wanna. Tons.	Pine Grove. Tons.	Lykens' Valley. Tons.	Shamo-kin. Tons.	Wyo-ming. Tons.	Total Supply. Tons.
1820.....	365.....									365
1821.....	1,073.....									1,073
1822.....	2,441.....									2,440
1823.....	5,023.....									5,823
1824.....	9,541.....									9,541
1825.....	28,396.....	6,500.....		6,500.....						34,896
1826.....	31,280.....	16,767.....		16,767.....						48,047
1827.....	32,074.....	31,360.....		31,360.....						63,434
1828.....	30,232.....	47,284.....		47,284.....						77,516
1829.....	25,110.....	79,972.....		79,972.....	7,000.....					112,083
1830.....	41,750.....	89,984.....		89,984.....	42,700.....					176,734
1831.....	40,966.....	81,854.....		81,854.....	54,000.....					170,820
1832.....	75,000.....	195,271.....	14,000.....	209,271.....	84,500.....					368,771
1833.....	123,000.....	216,210.....	36,761.....	252,971.....	111,777.....					487,748
1834.....	106,244.....	191,540.....	35,152.....	226,692.....	43,700.....					376,636
1835.....	131,250.....	302,024.....	37,494.....	339,518.....	98,845.....	5,500.....				575,103
1836.....	146,522.....	393,975.....	38,070.....	432,045.....	104,500.....	9,978.....	5,439.....			698,484
1837.....	225,937.....	491,230.....	31,922.....	523,152.....	115,287.....	16,726.....	6,430.....			887,632
1838.....	214,211.....	421,569.....	12,306.....	433,875.....	76,321.....	16,665.....	6,005.....	4,104.....		746,181
1839.....	222,042.....	333,927.....	8,249.....	442,176.....	122,300.....	19,227.....	5,372.....	11,930.....		823,479
1840.....	225,591.....	433,263.....	19,028.....	452,291.....	148,470.....	19,463.....	5,302.....	15,928.....		867,045
1841.....	142,807.....	513,280.....	41,412.....	584,692.....	192,270.....	15,306.....	6,176.....	22,154.....		964,255
1842.....	271,913.....	491,602.....	26,831.....	541,504.....	205,253.....	31,437.....	181.....	10,098.....	47,346.....	1,107,732
1843.....	267,125.....	647,308.....	30,005.....	677,313.....	227,605.....	22,879.....		9,870.....	57,740.....	1,262,532
1844.....	376,363.....	782,070.....	58,309.....	840,379.....	251,005.....	27,719.....		13,087.....	114,906.....	1,623,459
1845.....	430,993.....	1,008,901.....	76,122.....	1,085,023.....	266,072.....	31,208.....		10,135.....	178,401.....	2,002,877
1846.....	522,518.....	1,150,828.....	86,155.....	1,236,983.....	318,400.....	55,346.....		12,646.....	188,003.....	2,333,494
1847.....	643,568.....	1,467,499.....	105,345.....	1,572,844.....	388,200.....	61,233.....		14,904.....	289,898.....	2,970,597
1848.....	680,193.....	1,490,209.....	162,625.....	1,652,834.....	434,267.....	56,938.....	2,000.....	19,357.....	237,271.....	3,082,860
1849.....	800,987.....	1,428,156.....	174,757.....	1,605,626.....	454,240.....	78,299.....	25,000.....	19,658.....	258,080.....	3,241,890
1850.....	722,688.....	1,500,047.....	211,960.....	1,712,007.....	543,886.....	62,869.....	35,000.....	19,921.....	275,109.....	3,371,420
1851.....	989,251.....	1,868,277.....	310,307.....	2,178,584.....	788,485.....	+00,000.....	53,150.....	23,989.....	336,018.....	+4,389,476

* By Reading Rail-road to Dec. 27.

† Enlarging Union Canal.

‡ Including 20,000 tons from the Dauphin Mine.

COMMERCE U. S. WITH GREAT BRITAIN AND FRANCE.—The official returns of the Treasury Department show a very rapid augmentation of the international trade with Great Britain, the exports of United States produce to that country being in 1852 nearly three times that of 1842. The re-export of foreign goods to Great Britain has also largely increased, but the importations thence have not preserved the same ratio of improvement. The whole quantity of merchandise imported into the Union in 1851, was 191 millions, paying duty \$49,017,000, an average of \$25·6 per cent. In 1850 the import was 155½ millions, and the duties 25·5 per cent.; and this has been nearly the annual average of duties under the present tariff. In 1846, the last year of the former tariff, the dutiable importation was \$96,924,000, and the gross duties 30,000,000, or about 31 per cent. The actual difference between the average duty now and under the former law, is therefore 5½ per cent. But it is alleged in certain quarters that the under valuation of invoices by the present system, reduces the actual average upon the value to a

much greater extent than the actual figures show. This may be, and undoubtedly is the case, because stringent laws always invite evasion, to some extent; but that it is so in any very considerable degree, the general current of trade does not show. The diminution which has taken place in duties upon food and raw materials in England, has, fulfilling the object intended by those modifications, largely promoted the importation of those raw materials and food which enter into the successful prosecution of English industry. The United States have furnished a large proportion of those products, and, as a consequence, have taken more freely of the results of English industry, but in a series of years the figures show a balance in favor of England; that is to say, only twice in fifteen years have the importations from England exceeded the exportation to that country.

The following table shows the annual importation thence and exports thither, distinguishing domestic from foreign goods:

IMPORTS FROM AND EXPORTS TO GREAT BRITAIN.

	Imports.	Exports.		Total Exports.
		Domestic.	Foreign.	
1837	41,886,193	49,685,206	4,897,364	54,582,570
1838	44,861,678	50,623,626	1,555,804	52,179,490
1839	65,964,588	55,971,878	1,954,364	57,926,242
1840	33,737,699	54,202,176	5,125,186	59,327,362
1841	46,662,815	46,165,735	3,386,538	49,552,273
1842	34,204,249	38,254,511	3,012,419	41,266,930
1843, 9 months.	26,313,499	39,720,951	1,121,801	40,842,752
1844	42,091,404	47,794,124	1,142,096	48,936,220
1845	45,500,903	44,234,279	4,922,180	49,156,459
1846	45,160,020	45,500,957	1,809,368	47,310,325
1847	67,598,628	86,266,935	1,028,422	87,295,357
1848	61,846,119	67,762,741	8,964,012	76,726,753
1849	61,154,538	76,628,204	1,971,776	78,600,070
1850	75,159,424	68,733,730	4,436,643	73,170,373
1851	93,847,886	109,531,712	8,414,403	117,946,115

The year 1847 embraced the large exports of food to supply the unusual scarcity of that year. The sum of the exports of domestic produce for four

years since and four years before that year, as compared with the imports of the same period, show results as follows:

	1843-46.	1848-51.	Increase.
Imports	159,065,822	292,008,167	132,942,345
Exports	177,250,311	322,656,478	155,406,167
Excess of exports	18,184,489	30,648,311	12,453,822

The increased trade between the two countries has been nearly ninety per cent. in four years. In the last year the product of California has swollen the exportation of the proceeds of American industry, but in the previous three years the international movement of specie had been unimportant. It is a necessary result of the surplus production of gold, that large quantities should be exported. It is in that respect with nations as with individuals. California has always been possessed of gold, but derived no benefit from it, but in parting with it to other countries, and they have sold it very cheap. Severe as has been the labor of procuring it, it has been exchanged for articles which require less labor in the production, and the immediate operators have not profited much by it. It is probable, however, that had the labor which has been expended in the

California gold mines been employed in the older states, it would have produced nearly as much wealth, but of a description to have been consumed on the spot. Gold is not subject to consumption, and its production beyond a certain point must be surplus, and result in the extended commerce of the country. It stimulates, however, all other industries. The shoe trade of Massachusetts has, for instance, been stimulated into great prosperity by the demand for California, but the gold received in exchange will go to Europe. Although the commercial balance is annually due to the United States from Great Britain, yet the reverse is the case with France—the importations from that country generally exceed the exports thither by a large figure.

Thus, for the last four years the movement has been as follows:

	1848-51.		Total.
	Specie.	Merchandise.	
Import	901,093	110,748,299	111,649,392
Export	15,970,979	57,146,861	74,137,830
Excess of imports		53,601,438	34,511,562
“ exports	\$16,079,876		

The balance in favor of France is a little more than the balance against England, and the latter country has not only to meet the bills running upon her from France for this balance, but also for the balance on the China trade, and it is the success with which the "Peel policy" was carried out that enables her to do so from the proceeds of the produce she buys of us. The modifications of the cost of raw materials and food, through the removal of duties and changes in the navigation laws, have stimulated her industry to demand greater supplies of produce, which, as we see, meet the demands upon her from other countries for American account. If, however, the invoices which she sends were undervalued to the extent charged in certain quarters, it would show itself in the exchanges. But this is not the case. The balance shown to be in English hands, by the returns, suffices to meet the adverse balances in other quarters without disturbance.

The following is a sort of account current with France for 1851:

IMPORTS FROM FRANCE.

Animals.....	\$39,743
Paintings.....	6,326
Platina.....	14,672
Plaster.....	2,181
Clothing.....	13,981
Garden seeds.....	13,862
Other.....	90,755
Total free.....	400,702
Cloths.....	1,988,181
Shawls.....	135,562
Blankets.....	66,872
Hose.....	19,211
Worsted.....	955,268
Flannels.....	4,409
Carpets.....	6,537
Cotton print.....	1,386,669
" white.....	161,738
" rambooured.....	535,057
" velvet.....	6,747
" hose.....	117,716
Silk, pieces.....	10,576,334
" hose.....	36,533
" sewing.....	47,555
" hats.....	66,697
Bolting cloth.....	22,185
Silk and worsted.....	746,861
Linens.....	135,351
Clothing.....	276,935
Laces.....	19,185
Lastings.....	12,633
Straw hats.....	111,879
Brass goods.....	54,433
Tin foil.....	16,320
Lead.....	335,638
Jewels.....	14,944
Clocks.....	59,404
Watches.....	1,757,502
" crystals.....	14,771
Buttons.....	158,488
Glass.....	58,524
Plate.....	106,075
Bottles.....	51,301
Paper, writing.....	80,385
" hanging.....	117,929
" other.....	88,584
Boots.....	47,785
Leather.....	792,937

Shoes.....	20,434
Gloves.....	510,816
China.....	427,428
Furs.....	381,572
Corks.....	73,679
Brushes.....	115,017
Wool.....	494,125
Wines.....	1,385,000
Brandy.....	2,051,020
Loaf sugar.....	33,962
Almonds.....	30,721
Prunes.....	64,535
Cheese.....	26,744
Soap.....	32,327
All others.....	5,111,769

Total imports.....\$31,410,720

EXPORTS OF THE UNITED STATES PRODUCE.

Oil.....	\$1,695
Whalebone.....	268,440
Lumber.....	351,733
Oak bark.....	90,659
Naval stores.....	50,986
Ashes.....	167,283
Skins.....	13,602
Provisions.....	117,678
Rice.....	156,736
Cotton.....	18,124,512
Tobacco.....	728,831
Wax.....	17,690
Ironware.....	5,800
Cottonware.....	3,346
Books.....	6,801
Gold leaf.....	3,000
All others.....	328,060

Total.....\$20,435,852

The aggregates stand thus:—

Imports merchandise.....	\$31,410,720
Exports produce.....	20,435,852

Balance.....	10,974,868
Specie import.....	\$304,833
" export.....	7,473,634
Balance specie.....	7,168,401
Exports foreign goods.....	341,660
Balance paid in bills on England.....	7,510,061
	\$3,464,070

The goods imported from France, viz.: silks, wines and brandies, are those which pay the highest duties under our tariff; and the fact is to be here remarked, that the country which sends the goods taxed the highest under our laws, is that which has the largest balance against us; whilst that country, whose merchandise is least taxed, gives a balance largely in our favor. This speaks volumes in relation to the efficacy of a tariff to change the "balance of trade." One reason why the importation of silks from France bears so high a figure, is the tax which the government imposes upon the raw material of that manufacture here. If these duties were removed, the importation of silks from France would suffer a great diminution, under the influence of home competition, just as lawns, de laines and shawls have already been affected.

We may compare the customs revenues of the three countries, for the last two years, reducing all to dollars, thus:

CUSTOMS REVENUES OF FRANCE, UNITED STATES AND GREAT BRITAIN.

	1851.	1852.	1851.	1852.
France, year to Jan. 1.....	f. 124,696,461	f. 117,121,405	\$23,380,585	\$21,960,762
Great Britain, year to April 5.....	£18,730,561	£18,827,838	89,806,678	90,264,554
United States, year to April 1.....	\$50,201,074	\$50,739,453	50,201,074	50,739,453

The customs revenue of France is this year increased, and is twelve per cent. more for the first quarter of 1852 than for the same quarter in 1851. Nevertheless, the anti-commercial policy of that country betrays itself as well in the small revenues,

which, for 40,000,000 of French, is not half that for 23,000,000 of American, and is less than a fourth of that of 29,000,000 of British. There is no doubt, however, that the present government of France will, through diminished restrictions, give an im-

pulse to the internal industry of the country, and endeavor at least to follow England in the more successful production of material wealth.—*U. S. Economist.*

COTTON CROP OF 1851-'52.—NEW-ORLEANS.—Exported foreign, 1,179,103; coastwise, 256,712; stock 1st Sept., 1852, 9,758—1,445,573 bales. In this is included, 15,390 stock 1st September, 1851; 37,366 received from Mobile and Montgomery; 4,807 received from Florida; 14,546 received from Texas.

ALABAMA.—Exported foreign, 430,846; coastwise, 143,804; consumption in Mobile, 842; stock, 1st Sept., 1852, 2,319—577,811 bales. In this is included, 344 wrecked cotton returned; 221 received from Texas and New-Orleans; 27,797 stock, 1st September, 1851.

TEXAS.—Exported foreign, 7,235; coastwise, 57,096; stock, 1st Sept., 1852, 317—64,648 bales. In this is included, 596 stock, 1st September, 1851.

FLORIDA.—Exported foreign, 64,492; coastwise, 123,829; stock in Apalachicola, 1st September, 1852, 451—188,772 bales. In this is included, 273 stock in Apalachicola, 1st September, 1851.

GEORGIA.—Exported foreign, uplands, 111,249; Sea Islands, 7,605; coastwise, uplands, 224,958; Sea Islands, 3,656; burnt at Savannah, 5,600; stock in Savannah, 1st Sept., 1852, 2,950; stock in Augusta, 1st September, 3,707—359,725 bales. In this is included, 34,011 stock in Savannah and Augusta, 1st September, 1851.

SOUTH CAROLINA — CHARLESTON.—Exported

foreign, uplands, 270,427; Sea Islands, 19,008 coastwise, uplands, 199,605; Sea Islands, 3,305; burnt at Charleston, 300—492,645 bales. *Export from Georgetown*—New-York and Boston, 2,535; Stock in Charleston, 1st Sept., 1852, 11,146—506,326 bales. In this is included, 10,953 stock in Charleston, 1st September, 1851, 18,759 received from Savannah.

NORTH CAROLINA.—Exported foreign, 424; coastwise, 15,818—16,242 bales.

VIRGINIA.—Exported foreign, 35; coastwise and manufactured, (taken from ports,) 20,955; stock, 1st September, 450—21,440 bales. In this is included, 620 stock 1st September, 1851.

Received by New-York and Erie Canal, 175.

Total crop of the United States, 1852, 3,015,029 bales.

Total crop of the United States, 1851, 2,355,257 bales.

Increase from last year, 659,722 bales.

EMIGRATION FROM GREAT BRITAIN.—The following returns, just issued by her Majesty's Colonial Land and Emigration Commissioners, show the annual emigration for 27 years, from 1825 to 1851, inclusive. It will be seen that during the last year, whilst emigration from the United Kingdom to the United States has increased by 44,277, and to Australia by 5,495, as compared with the preceding year, there has been a falling off of emigrants to other places of above one-half, and to the North American possessions the increase has been 30 per cent., the aggregate increase being 55,117, or nearly 20 per cent.

Year.	North American Colonies.	U. States.	Australian Colonies and N. Zealand.	All other places.	Total.
1825.....	8,741.....	5,551.....	485.....	114.....	14,891.....
1826.....	12,818.....	7,063.....	903.....	116.....	20,900.....
1827.....	12,648.....	14,526.....	715.....	114.....	28,003.....
1828.....	12,084.....	12,817.....	1,056.....	135.....	26,092.....
1829.....	13,307.....	15,678.....	2,016.....	197.....	31,198.....
1830.....	30,574.....	24,887.....	1,242.....	204.....	56,907.....
1831.....	58,067.....	23,418.....	1,561.....	114.....	83,160.....
1832.....	66,339.....	32,872.....	3,733.....	196.....	103,140.....
1833.....	28,808.....	29,109.....	4,093.....	517.....	62,527.....
1834.....	40,060.....	33,074.....	2,800.....	288.....	76,232.....
1835.....	15,573.....	26,720.....	1,860.....	325.....	44,478.....
1836.....	34,226.....	37,774.....	3,124.....	293.....	75,417.....
1837.....	29,884.....	36,770.....	5,054.....	326.....	72,034.....
1838.....	4,578.....	14,332.....	14,021.....	292.....	33,222.....
1839.....	12,658.....	33,536.....	15,786.....	227.....	62,207.....
1840.....	32,293.....	40,642.....	15,850.....	1,958.....	90,743.....
1841.....	38,164.....	45,117.....	32,625.....	2,786.....	118,592.....
1842.....	54,123.....	63,852.....	8,534.....	1,835.....	128,344.....
1843.....	23,518.....	28,335.....	3,478.....	1,881.....	57,212.....
1844.....	22,924.....	43,660.....	2,229.....	1,873.....	70,686.....
1845.....	31,803.....	58,538.....	830.....	2,330.....	93,501.....
1846.....	43,439.....	82,239.....	2,347.....	1,826.....	129,851.....
1847.....	109,680.....	142,154.....	4,949.....	1,487.....	258,270.....
1848.....	31,065.....	108,283.....	23,904.....	4,887.....	248,089.....
1849.....	41,367.....	219,450.....	32,091.....	6,590.....	299,498.....
1850.....	32,961.....	223,078.....	16,037.....	8,773.....	280,849.....
1851.....	42,605.....	267,357.....	21,536.....	4,472.....	335,966.....
Total.....	884,306.....	1,750,682.....	222,555.....	44,156.....	2,901,999.....

MOBILE IMPORTS AND EXPORTS, 1852.

1851.	Exports			Dutiable.	Imports	
	Am. vessels.	For. Vessels.	Total.		Free.	Total.
1st Quarter....	\$4,197,492.....	\$1,596,480.....	\$5,723,972.....	\$101,632.....	\$23,223.....	\$124,855.....
2d Quarter....	3,510,716.....	2,217,051.....	5,727,767.....	105,024.....	7,600.....	112,624.....
3d Quarter....	1,194,197.....	367,554.....	1,561,751.....	75,431.....	1,800.....	77,231.....
4th Quarter....	1,104,329.....	437,546.....	1,541,876.....	138,146.....	168,036.....	306,182.....
Total, 1851.....			\$14,555,366.....			\$620,892.....
1852.						
1st Quarter....	\$4,346,358.....	\$3,555,969.....	\$7,902,327.....	\$178,721.....	\$5,776.....	\$184,500.....
2d Quarter....	3,745,493.....	2,637,088.....	6,382,581.....	99,890.....	35,115.....	135,005.....
Total, Jan. 1, to Aug. 31, 1852.....			\$14,248,908.....			\$319,505.....

This shows a very remarkable increase in the business of that port. The exports are of course, mostly, if not altogether, cotton, and the details for the year ending August 31st, are as follows:

COTTON EXPORTS FROM MOBILE FOR THE YEARS ENDING AUGUST 31, 1851-52.

	1852.			1851		
	Bales.	Pounds.	Value.	Bales	Pounds.	Value.
To Great Britain in—						
U. States vessels....	129,980	64,975,117	\$4,998,308	145,357	71,697,340	\$7,640,647
British ".....	176,022	87,636,256	6,626,174	102,830	50,695,190	5,621,146
Bremen ".....				1,710	839,780	106,726
Total to G. Britain.	306,002	152,611,373	\$11,624,482	249,897	123,232,310	\$13,367,520
France—						
U. States vessels....	95,690	49,751,594	\$3,921,955	44,414	21,907,208	\$2,565,249
French ".....	2,063	1,006,216	29,143	1,046	518,966	68,111
Total to France....	97,753	50,757,810	\$3,971,098	45,460	22,426,174	\$2,633,360
Spain—						
U. States vessels....	102	43,608	\$3,561			
Spanish ".....	5,469	2,563,052	236,693	13,945	6,743,337	876,630
Total to Spain.....	5,571	2,606,660	\$240,254	13,945	6,743,337	\$876,630
Russia.....	2,009	981,434	\$84,853	1,500	747,070	\$82,709
Holland.....	2,635	1,359,733	98,554	800	390,326	32,041
Belgium.....	4,182	2,082,092	161,095	2,554	1,264,814	164,019
Sardinia.....	8,478	4,183,132	329,951	3,896	1,960,621	213,290
Sweden.....	741	362,982	29,268	1,230	606,636	59,598
Mexico.....	3,475	1,521,110	116,387	2,491	1,244,743	142,571
Total to other } foreign ports }	21,520	10,490,483	\$20,111	12,471	6,214,210	694,232
Grand total.....	430,846	216,466,336	\$16,655,947	321,777	158,616,031	\$17,572,742

In relation to this table the Planters' Prices Current remarks, "The shipments to foreign ports are 430,846 bales, weighing 216,466,336 pounds, and valued at \$16,655,947 06. The average weight of the bales is 502 pounds. The cost price per bale averages \$38 65, and the average cost per pound is 7½ cents. The crop of South Alabama at this estimate, amounts to twenty-one millions of dollars, and the crop of the country, which may be set down at about 3,000,000 bales, will amount to \$115,950,000."

Also, after remarking upon local improvements, it says: "In addition to these local evidences of improvement, we have to notice an undertaking to increase the facilities of our commerce, in the establishment of a line of ocean steamers, to run be-

tween this city and New-York, the first ship of which has been completed and may be expected to arrive here in a few days; so that, when our great rail-road enterprise, which with giant strides is pushing on to the valley of the Ohio, shall be accomplished, we shall find a concentration of facilities here, that cannot fail to make our little city an emporium worthy the intelligent, industrious and wealthy population, spread over the fertile regions that border our noble rivers, and who look to this place as a market."

The quarterly exports from Mobile as compared with New-Orleans, for six quarters, have been as follows:

	Mobile.			New-Orleans.		
	U. S. Ves-	For. Ves-	Total.	U. S. Ves-	For. Ves-	Total.
1851.						
1st Quarter.....	4,197,492	1,596,480	5,723,972	11,431,425	7,692,659	19,124,084
2d Quarter.....	3,510,716	2,217,051	5,727,767	12,529,388	3,449,907	15,979,295
3d Quarter.....	1,194,197	367,554	1,561,751	4,058,085	1,302,995	5,361,080
4th Quarter.....	1,104,329	437,547	1,541,876	8,936,430	969,215	9,905,645
Total, 1851.....			\$14,555,366			\$50,370,105
1852.						
1st Quarter.....	4,346,358	2,555,969	7,902,327	8,542,789	7,478,048	16,020,837
2d Quarter.....	3,745,493	3,637,088	6,382,581	11,931,884	4,856,751	16,788,635
Total.....			\$14,284,908			\$32,989,472

This result shows an increased business in favor of Mobile for the first six months of the present year, but the increasing business of New-Orleans, from the vast resources of the Mississippi, raise the figures of her trade, perhaps, beyond the real inte-

rest of the city in it; that of Mobile, on the other hand, shows the growing wealth of the rich country watered by her noble rivers, and of which she is the commercial centre.

MEXICO IN 1852.—The total population of Mexico, according to the latest authorities on the subject,* is 7,661,919, which is about seven inhabitants to the square mile. The following table, which we

take from the work of M. Lerdo de Tejada, is the latest on the subject, and probably the most accurate :—

States and Territories.	Population.	Capitals.	Population.
Chihuahua.....	147,600.....	Chihuahua.....	14,000.....
Chiapas.....	144,070.....	San Christobel.....	6,500.....
Coahuila.....	75,340.....	Saltillo.....	19,898.....
Durango.....	162,218.....	Durango.....	22,000.....
Guanajuato.....	713,583.....	Guanajuato.....	48,954.....
Guerrero.....	270,000.....	Tixtla.....	4,500.....
Jalisco.....	774,461.....	Guadalajara.....	63,000.....
Mexico.....	973,697.....	Toluca.....	12,000.....
Michoacan.....	491,679.....	Morelia.....	25,600.....
Nuevo Leon.....	133,361.....	Monterey.....	13,534.....
Oajaca.....	525,101.....	Oajaca.....	25,000.....
Puebla.....	580,000.....	Puebla.....	71,631.....
Queretaro.....	184,161.....	Queretaro.....	29,702.....
San Luis Potosi.....	368,120.....	San Luis.....	40,000.....
Sonora.....	139,374.....	Ures.....	7,000.....
Sinaloa.....	160,000.....	Culiacan.....	12,000.....
Tobasco.....	63,580.....	San Juan Bautista.....	4,000.....
Tamaulipas.....	100,064.....	Ciudad Victoria.....	5,500.....
Vera Cruz.....	264,725.....	Vera Cruz.....	8,228.....
Yucatan.....	680,948.....	Merida.....	40,000.....
Zacatecas.....	356,024.....	Zacatecas.....	25,005.....
Federal District.....	200,000.....	Mexico.....	170,000.....
Tlaxcala.....	80,171.....	Tlaxcala.....	3,463.....
Colima.....	61,243.....	Colima.....	31,774.....
Lower California.....	12,000.....	La Paz.....	500.....
Total population.....	7,661,919.....		

Baron Humboldt, in 1803, estimated the population of New Spain or Mexico, including Upper and Lower California, at 5,837,100, a number, however, which he says is probably much below the existing population. The first census of Mexico was that of Conde de Revellagigedo, by order of the king of Spain, in 1793. The different censuses are as follows :

1793, Revellagigedo.....	5,270,029.....
1803, Humboldt.....	5,837,100.....
1824, Poinsett.....	6,500,000.....
1830, Burkhardt.....	7,996,000.....
1839, Unknown.....	7,065,000.....
1842, Mexican Government.....	7,015,509.....
1850, M. L. de Tejada.....	7,661,919.....

It is probably quite impossible to arrive at the exact population of Mexico, from the fact that every attempt to take a census is considered by the people as a sinister presage of some financial operation—some tax, forced contribution, or conscription. Every head of a family, accordingly, endeavors to diminish the number of individuals of his household. Taking the estimate of Mr. Poinsett, in 1824, as correct, and that of M. Tejada, in 1850, it will be seen that since Mexico has been independent of Spain, its population, in nearly a quarter of a century, has increased only 1,161,919.

Brantz Mayer enumerates the different castes and classes of the population of Mexico as follows :—

Indians.....	4,000,000.....
Whites.....	1,000,000.....
Negroes.....	6,000.....
All other castes, such as Zambos, Mestizos, Mulattoes, Quadroons, and Quinteroons,.....	2,009,509.....
Total population.....	7,015,509.....

ANNUAL EXPENSES OF THE GENERAL GOVERNMENT.—According to the official reports for 1850, the expenses for that year were as follows :—

Department of War and Marine.....	\$6,280,449.....
“ of Relations.....	870,004.....
“ of Justice.....	426,220.....

* M. Lerdo Tejada, 1850, and the Sociedad Mexicana de Geografia y Estadistica.

Other expenses of government.....	1,689,154.....
Annual interest on the external debt of \$51,208,250, at 5 per cent.....	2,560,412.....
Annual interest on that part of the internal debt which pays interest, and which has funds assigned for its payment, not including the <i>creditos Mineria</i>	1,300,000.....
	13,126,239.....
There should be added to this the interest on the debt anterior to the war of independence, which is accumulating at the rate of from 5 to 6 per cent. annually, making near.....	700,000.....
Total annual expenses.....	\$13,826,239.....

NATIONAL DEBT.—The general national debt of Mexico amounts to \$133,524,242, and is divided as follows :—

External debt.....	\$51,208,250.....
Interest in arrears.....	6,700,000.....
Total external debt.....	\$57,908,250.....
Internal debt.....	75,615,992.....
Total national debt.....	\$133,524,242.....

The debt anterior to the war of independence amounts to \$30,000,000, bearing from five to six per cent. interest. It is included above in the internal debt. It will be seen by the above, that the annual interest on the national debt amounts to near \$4,000,000. The national debt of Mexico is rapidly increasing. In 1843, according to Brantz Mayer, it was only \$84,150,000. It is now \$133,524,242, according to the best Mexican authorities ; and the prospect of reducing the principal is now more gloomy than ever. In all probability Mexico was never so completely prostrated as at present.

One of the largest items in the internal debt of Mexico is one of \$10,000,000, due to civil and military *employes* of the government. The present number of this class is 3,947 individuals, a large number of whom consists of mere drones, feeding out of the national treasury as the occupants of sinecures. In 1843 the amount paid to officers of the army alone, who are on leave of absence, or retired, was \$747,158.

REVENUES OF THE GENERAL GOVERNMENT.—These proceed almost entirely from direct imposts; and it is not possible to fix the exact annual amount of them, owing to fluctuations. According to the latest statistics, the revenues for 1850 were as follows:—

Importation duties.....	\$4,000,000
Exportation duties.....	450,000
Tonnage duties.....	60,000
Extra importation duties.....	140,000
Duties on sales of merchandise.....	210,000
Entrance duties.....	500,000
Duties on moneys imported.....	300,000
Contingents of the states.....	1,011,000
Tobacco revenues.....	650,000
Naples (playing cards).....	20,000
Post-offices.....	90,000
Direct contributions.....	450,000
Duty on the sale of funds.....	50,000
Mints.....	100,000
National Lottery.....	60,000
Stamped paper.....	150,000
Montepios (Monte de Piete, pawnbrokers)	30,000
Duties on assays of silver in the districts and territories, imposts on inheritances, right of passage, letters of security, ships' papers, passports, and from other minor sources.....	229,000

Total revenues for 1850.....\$8,500,000

Comparing this with the annual expenses, it is readily seen that there is an annual deficit of the public treasury of about \$5,000,000.

The annual total expense of all the individual states of the Mexican Republic amounts to about

\$5,000,000. In 1850, it was \$5,156,850, including the *contingente* paid to the general government. The revenues of the several states arise from direct and indirect taxation—the first on persons, property and professions; and the second on the products of agriculture and of domestic and foreign industry, inheritances, sales of real estate, and the exploitation of the mines. Although these revenues would be sufficient to cover the expenses of the states, the want of plan in collecting them, and above all, the want of statistics, causes them to fall far short of what they would be if conducted by intelligent hands. Gross ignorance, avarice, and want of integrity in the rulers of Mexico, are the sole causes of her present ruined condition. In the first place they do not know how to rule; and in the second, they have not the honesty to enable them to make the best use of what little knowledge they possess. And so they go on declining. Mexico, with all the natural means of being the richest country in the world, is actually the poorest—a land of beggars and robbers. It would be a blessing to Mexico if some enlightened nation would conquer it—an easy task just now—and spread over it enlightened laws and manners. It is the only way in which Mexico can ever be regenerated. War is a blessing sometimes.

MASSACHUSETTS.—Our article upon this state was prepared some years ago, and therefore does not show her present wealth and resources. The reader will, however, find under the heads of BOSTON, RAIL-ROADS, UNITED STATES POPULATION, FISHERIES, COMMERCE, etc., a great many additional and later facts of great value. To these we append a few others.

COMMON SCHOOLS OF MASSACHUSETTS, 1ST JAN., 1852.

The following valuable statistics are taken from the Fifteenth Annual Report of the Secretary of the Board of Education, compiled December, 1851:

Number of towns in the Commonwealth, which have made returns.....	920
Number of public schools.....	3,987; increase, 109
Number of scholars of all ages in all the public schools in summer.....	179,497; " 3,153
In winter.....	199,429; " 5,026
Average attendance in all the public schools in summer.....	132,422; " 3,607
In winter.....	152,564; " 2,955
Number of persons under 5 years of age attending public schools.....	17,757; decrease, 25
Number over 15 years of age attending public schools.....	20,996; increase, 2,788
Number of persons between 5 and 15 years in the counties.....	196,536; " 3,304
Number of teachers in summer and winter—	
Males.....	2,432; decrease, 10
Females.....	6,262; increase, 274
Number of different persons employed as teachers during the year.....	6,991; " 256
Average length of the schools, 7 months and 14 days.	
Average wages paid per month, including value of board, males.....	\$36 29
Average wages paid per month, including value of board, females.....	15 25
Amount of money raised by taxes for the support of schools, including only the wages of teachers, board, and fuel.....	\$915,839 53; increase, \$51,171 68
Amount of board and fuel, and money voluntarily contributed for public schools.....	39,652 07; " 4,947 76
Amount of money appropriated to schools, as income of local funds.....	34,372 92
Aggregate expended on public schools, for wages, fuel, and superintendence.....	1,021,775 66; increase, 63,274 33
Amount raised for taxes, for each child between 5 and 15.....	4 71; " per child 19
Number of incorporated academies returned.....	69
Average number of scholars.....	4,154; increase, 437
Aggregate paid for tuition.....	\$65,612 65
Number of private schools.....	785; decrease, 60
Estimated average number of scholars.....	16,658
Estimated aggregate amount paid for tuition.....	\$266,312 32
Amount expended on public and private schools and academies, exclusive of the cost of repairing and erecting school edifices.....	1,353,700 63
The law requires each town to raise by tax, at least \$1 50 per child, between 5 and 15, as a condition of receiving a share of the income of the State School Fund.	
Number of towns that have raised \$1 50, or more, for each child between 5 and 15, according to returns.....	138
Number of towns that have raised less than \$1 50 for each child between 5 and 15, which have made returns.....	2
Number of towns that have raised twice this sum, (\$3) or more, per child between 5 and 15.....	173
Increase for the year.....	11

BIRTHS, MARRIAGES AND DEATHS IN MASSACHUSETTS.—According to a law of this state every city and town is required to make an annual return of the births, marriages and deaths to the Secretary of State.

Births.—"The whole number of births in the commonwealth, between January 1st and December 31st, 1850, was 27,664; in 1849, 25,773; being an increase of 1891, or 7.34 per cent. Of this number, 8,197 were of foreign parentage, against 6,480 in the year preceding; and there were 3,278 whose parentage was not stated, which is an improvement upon the last report, in which 4,235 births were not specified in this particular. It will be observed that a large proportion of the births of foreign parentage occurs in our cities or manufacturing towns. For instance, the whole number of births in Boston was 5,279, of which 3,340 were of foreign parentage; in Lowell, 488 American to 452 foreign; Fall River, 145 American to 164 foreign. Instances of this kind might be multiplied.

Marriages.—"The number of marriages for the year 1850, was 10,315; showing the unprecedented increase of 3,409, or nearly 50 per cent. over the preceding year. This large increase is in part owing to the returns being more full and complete; but it cannot be doubted that the late alteration in the law, concerning marriages, has helped to swell the returns of matrimonial alliances within the state. The number of marriages in Boston in 1849 was 1,187; in 1850, 2,467, being an increase of 1,280, or more than 100 per cent.

Deaths.—"The year 1850 was not marked by the prevalence of any particular disease or classes of diseases, and in this respect contrasts strongly with the preceding year. The number of deaths in 1850 was 3,817 less than in 1849, and this difference is mostly accounted for by the extraordinary prevalence of certain diseases in the latter year.

"It is gratifying to observe that while the births and marriages have increased, the deaths have greatly decreased. The whole number of deaths in 1849 was 20,423; in 1850, 16,606; being a decrease of 3,817, or 18.69 per cent.

MANUFACTURES.—WHAT SORT OF A FACTORY WILL FIFTEEN THOUSAND DOLLARS BUILD? AND HOW MUCH WORK WOULD SUCH AN ESTABLISHMENT DO?—In addition to the mass of statistics upon the subject of cotton manufactures, to be found in vol. i. of our *Industrial Resources*, we add the following calculations, which will show the extent of a fifteen thousand dollar factory, what it will produce daily, and what the expenses would be:

We will give the articles of machinery, and the cost price of each article, and then add an ample amount for freights and expense of putting the whole in operation:

For a plain good wooden building.....	\$2,000
For engine and fixtures.....	2,500
For one willow or cotton breaker.....	50
For one Whiting's lap winder.....	425
For six 30-inch cards and clothing.....	1,320
For railway drawing and fixtures.....	175
For two drawing heads.....	150
For one 16-strand speeder.....	240
For four 14-spindle throstle frames, making 576 spindles, at \$3 each.....	1,728
For twelve looms, at \$50 each.....	600
For one line spindle reel (40 bobbing).....	37
For one dressing frame.....	400
For one yarn press.....	40
For one 40-inch wool breaker.....	320
For one 40-inch burr machine.....	125
For one 40-inch wool card finisher, with condenser attached.....	340
For two 160-spindles wool mules.....	720
For clothing for wool cards.....	125
For shafting, hangers, drums, &c.....	705
For freights and expenses of putting up.....	3,000

\$15,000

We have about the extent of the establishment—now for its production and expenses per day.

The looms would produce, at the lowest calculation, 30 yards husey, making 360 yards per day—this, at 32 cents, is.....	\$115 20
The warp spindles would make 100 pounds yarn more than the looms would consume for husey—this, at 1s cents, is.....	1s 00
	\$133 20

The above is a very small calculation in regard to the production of the factory.

The expenses would be as follows:

For 210 pounds cotton, at 8 cents.....	\$16 80
For 200 pounds wool, at 30 cents.....	60 00
For 22 hands, at 40 cents per day.....	8 80
For 2 cord wood, per day, at \$2.....	4 00
For oil, for machinery and fuel.....	4 00
For engineer per day.....	2 50
For superintendent.....	4 00
For clerk.....	1 50
For interest on \$15,000.....	3 28
For wear and tear, and contingencies.....	10 00
For insurance.....	1 32
	\$116 20

There are three hundred and thirteen working days in a year; deduct thirty-three days for loss of time, and that would leave two hundred and eighty days. Allowing that number of working days, according to the above calculation the establishment would pay largely over 25 per cent. This is profit sufficient to induce capital to seek investments in the business; and it only wants a commencement, and we shall have factories springing up all around us.

Two reasons why the manufacturing business should engage all our citizens at this time: 1st., our cotton crop is increasing rapidly every year, and it is time we should contend for a part of the profits arising from its manufacture; and, 2d., because it is a money-making business.

NICARAGUA.—Since the preparation of our papers upon this head, the subject has new positions which our space will not allow to be examined here. See, however, *De Bow's Review*, vol. xiii., September, 1852.

NEW-ORLEANS.—Within the last year, 1852, New-Orleans has changed her form of municipal government, and organized herself into one community under one administration, a measure which is already telling upon her prosperity. She is greatly modifying her laws obnoxious to capital and progress, and has voted nearly four millions of dollars for railroad purposes in addition to private subscriptions, etc. Her public health has greatly improved, and Louisiana has adopted a new constitution favorable to the advancement of all her people. In addition to the statistics furnished in volume two we present the following:

NEW-ORLEANS COMMERCE OF 1851-'52.—Summary of Her and Foreign Trade. The value of products received from the interior since 1st September, 1851, is \$108,051,708, against \$106,924,083 last year. The value of the exports of American produce, for the year ending 30th June last, according to the Custom-house records, was \$76,314,569, against \$81,216,925 last year. Of this amount \$48,076,197 was to foreign ports, and \$28,268,327 coastwise. The value of foreign merchandise exported during the same period was only \$44,760. These figures exhibit a decrease in the total exports, as compared with last year, of \$5,273,526. In the exports to foreign countries the decrease is \$6,312,986, but there is an increase coastwise of \$1,039,460.

* From the valuable tables of the New-Orleans Prices Current.

There has been a material falling off in the operations of the branch mint, the total deposits of gold and silver, for the year ending 31st of July, 1852, being \$6,103,650, against \$9,107,722 last year. Of the gold, \$5,821,695 was from California, against \$8,152,878 from the same source last year. The coinage in the same period has been 675,500 pieces of gold, value \$6,370,000, and 1,488,000 pieces of silver, value \$235,600—total, 2,163,500 pieces, value \$6,605,600. Last year the total coinage was \$10,044,500.

COTTON.

Table showing the quotations for low middling to good middling cotton on the first of each month, with the rates of freight to Liverpool, and sterling bills at same date.

1851	Low mid. to good mid.	Sterling per ct. prm	Freights per lb.
September.....	7 $\frac{3}{4}$ a 8 $\frac{1}{2}$..	10 a 11 ..	3 $\frac{1}{2}$ a —
October.....	7 $\frac{3}{4}$ a 8 $\frac{1}{2}$..	10 a 11 ..	7-16 a —
November.....	6 $\frac{3}{4}$ a 7 $\frac{3}{4}$..	6 $\frac{1}{2}$ a 8 $\frac{1}{2}$..	1 $\frac{1}{2}$ a —
December.....	6 $\frac{3}{4}$ a 7 $\frac{3}{4}$..	9 a 10 $\frac{1}{4}$..	1 $\frac{1}{2}$ a 7-16
January, 1852..	6 $\frac{1}{4}$ a 7 $\frac{1}{2}$..	8 $\frac{1}{2}$ a 9 $\frac{1}{4}$..	13-32 a 7-16
February.....	7 a 7 $\frac{3}{4}$..	8 $\frac{1}{2}$ a 9 ..	3 a 13-32
March.....	7 $\frac{1}{4}$ a 8 $\frac{1}{2}$..	8 $\frac{1}{2}$ a 9 $\frac{1}{4}$..	15-16 a 3
April.....	7 a 7 $\frac{3}{4}$..	8 $\frac{1}{2}$ a 9 $\frac{1}{4}$..	9-16 a —
May.....	7 $\frac{1}{2}$ a 8 $\frac{1}{2}$..	8 a 8 $\frac{1}{2}$..	9-10 a —
June.....	8 $\frac{1}{4}$ a 10 ..	9 a 10 ..	1 $\frac{1}{4}$ a 5-16
July.....	8 $\frac{1}{2}$ a 11 ..	9 $\frac{1}{2}$ a 10 $\frac{1}{4}$..	5-16 a 3 $\frac{1}{2}$
August.....	8 $\frac{1}{2}$ a 11 ..	9 $\frac{1}{2}$ a 10 $\frac{1}{4}$..	5-16 a 3 $\frac{1}{2}$

Table showing the highest and lowest point in each month, for low middling to middling cotton.

	Highest	Lowest
September.....	8 $\frac{1}{2}$ a 9 ..	7 $\frac{3}{4}$ a 8 $\frac{1}{2}$
October.....	7 $\frac{3}{4}$ a 8 ..	6 $\frac{3}{4}$ a 7
November.....	7 $\frac{1}{4}$ a 7 $\frac{3}{4}$..	6 $\frac{1}{4}$ a 7
December.....	7 $\frac{1}{4}$ a 7 $\frac{3}{4}$..	6 $\frac{1}{4}$ a 7 $\frac{1}{2}$
January, 1852..	7 $\frac{1}{4}$ a 7 $\frac{3}{4}$..	6 $\frac{1}{4}$ a 7 $\frac{1}{2}$
February.....	7 $\frac{1}{2}$ a 7 $\frac{3}{4}$..	7 a 7 $\frac{1}{2}$
March.....	7 $\frac{3}{4}$ a 8 ..	7 a 7 $\frac{1}{2}$
April.....	7 $\frac{1}{4}$ a 7 $\frac{3}{4}$..	6 $\frac{3}{4}$ a 7 $\frac{3}{4}$
May.....	8 $\frac{1}{4}$ a 9 $\frac{1}{4}$..	7 $\frac{1}{2}$ a 8
June.....	8 $\frac{1}{2}$ a 9 $\frac{1}{4}$..	8 $\frac{1}{4}$ a 9
July.....	8 $\frac{1}{2}$ a 9 $\frac{1}{4}$..	8 $\frac{1}{2}$ a 9
August.....	8 $\frac{1}{4}$ a 9 $\frac{1}{4}$..	8 $\frac{1}{2}$ a 9 $\frac{1}{4}$

SUGAR TRADE OF NEW-ORLEANS.—The crop of 1851 proved, according to the very valuable statement of Mr. P. A. Champomier, to be 236,547 hhds., estimated at 257,138,000 lbs. Of this quantity there were 203,922 hhds. brown sugar made by the old process, and 32,625 hhds. refined, clarified, etc., including cistern bottoms. This was the produce of 1,474 plantations, of which 914 are worked by steam, and 560 by horse-power, and the result shows only a moderate yield, as the cane generally was not well matured, besides which the loss by crevasses is estimated to have been about 10,000 hhds. The crop also presented a low average in quality, as besides the immature condition of the cane, it was somewhat injured by frost, and we noticed several sales on the Levee as low as 1 $\frac{1}{2}$, 1 $\frac{3}{4}$ and 2 cents per lb. The following table, which shows the highest and lowest points in each month for fair sugar on the Levee, will indicate the general course of the market:

	Highest	Lowest
September.....	6 $\frac{1}{4}$ a 6 $\frac{1}{2}$..	5 $\frac{3}{4}$ a 6 $\frac{1}{4}$
October.....	5 $\frac{1}{4}$ a 6 $\frac{1}{4}$..	4 $\frac{1}{2}$ a 5
November.....	4 $\frac{1}{2}$ a 5 $\frac{1}{4}$..	4 $\frac{1}{4}$ a 4 $\frac{1}{4}$
December.....	4 a 4 $\frac{1}{2}$..	3 $\frac{1}{2}$ a 4
January.....	3 $\frac{3}{4}$ a 4 $\frac{1}{2}$..	3 $\frac{1}{2}$ a 4
February.....	3 $\frac{3}{4}$ a 4 $\frac{1}{2}$..	3 $\frac{1}{2}$ a 4
March.....	4 a 4 $\frac{1}{2}$..	3 $\frac{1}{4}$ a 4 $\frac{1}{4}$
April.....	4 $\frac{1}{4}$ a 4 $\frac{1}{2}$..	3 $\frac{3}{4}$ a 4 $\frac{1}{2}$
May.....	5 a 5 $\frac{1}{4}$..	4 $\frac{1}{2}$ a 4 $\frac{3}{4}$
June.....	5 $\frac{1}{4}$ a 5 $\frac{1}{2}$..	5 a 5 $\frac{1}{4}$
July.....	5 $\frac{1}{4}$ a 5 $\frac{1}{2}$..	5 a 5 $\frac{1}{4}$
August.....	5 $\frac{1}{4}$ a 5 $\frac{1}{4}$..	5 a 5 $\frac{1}{2}$

These figures present a considerably lower average than was obtained for the crop of last year, the increase in quantity and the deficiency in quality having both tended to this result. The reported sales on plantation have been at the following rates, for crops—3 $\frac{1}{4}$, 3 $\frac{1}{2}$, 3 $\frac{3}{4}$, 3 $\frac{7}{8}$, 4, 4 $\frac{1}{8}$, 4 $\frac{1}{4}$, 4 $\frac{1}{2}$, 4 $\frac{3}{4}$ and 5 cents per lb., the lowest being in December, for a mixed crop, and the highest in April, for a prime one. The prevailing rates of the season have been 4 a 4 $\frac{1}{2}$ cents per lb. for prime crops.

The annexed table gives the crop of each year for the last twenty-two years, and a reference to it will show great fluctuations in the product:

Crop of 1851.....	236,547 hhds.
" 1850.....	211,203 "
" 1849.....	247,923 "
" 1848.....	220,000 "
" 1847.....	240,000 "
" 1846.....	140,000 "
" 1845.....	186,650 "
" 1844.....	200,000 "
" 1843.....	100,000 "
" 1842.....	140,000 "
" 1841.....	90,000 "
" 1840.....	87,000 "
" 1839.....	115,000 "
" 1838.....	70,000 "
" 1837.....	65,000 "
" 1836.....	70,000 "
" 1835.....	30,000 "
" 1834.....	100,000 "
" 1833.....	75,000 "
" 1832.....	70,000 "
" 1829.....	48,000 "
" 1828.....	88,000 "

The crop of Texas is said to give highly favorable promise, and the yield is expected to be more than double that of last year.

In an elaborate statement, made up at New-York, the consumption of the United States, for the year 1851, is put down at 321,736 tons. This is exclusive of about 40,000 lbs. of maple sugar, and of a large quantity of sugar made from foreign molasses, which we have no data for estimating.

MOLASSES.—The product of molasses from the last cane crop was, according to the statement of Mr. P. A. Champomier, unusually large, in proportion to the yield of sugar, it being estimated at seventy gallons per 1,000 lbs., against fifty gallons the season previous. Thus the whole product is set down at 18,300,000 gallons, against 10,500,000 gallons the season previous. The increased yield is attributed to the immature condition of the cane, the ripening of which was retarded by the late rains. Notwithstanding this very material addition to the supply, however, prices generally have been very well maintained, as will be seen on reference to the annexed table, which exhibits the highest and lowest points in each month, for sales on the levee in barrels:

	Highest	Lowest
September.....	25 a 30 ..	23 a 30
October.....	23 a 30 ..	20 a 28
November.....	26 a 27 ..	22 $\frac{1}{2}$ a 23 $\frac{1}{2}$
December.....	22 $\frac{3}{4}$ a 24 $\frac{1}{4}$..	17 a 21
January.....	17 a 21 ..	15 a 20 $\frac{1}{2}$
February.....	20 a 25 ..	15 a 21
March.....	15 a 26 ..	14 a 25
April.....	18 a 27 ..	15 a 26
May.....	24 a 28 $\frac{1}{2}$..	20 a 28
June.....	23 a 28 ..	20 a 28
July.....	18 a 28 ..	15 a 28
August.....	18 a 28 ..	15 a 28

TOBACCO.—TRADE OF NEW-ORLEANS, 1851-2.—At the commencement of the commercial year which has just closed, the stock of tobacco in this port (including all on shipboard not cleared) was 23,871 hhds., of which about 10,000 hhds. were in the hands of factors, the remainder being composed of strips and lugs for forwarding, and of parcels

which had changed hands, and were awaiting opportunity for shipment.

The quotations given in our last annual statement were, for *Frosted*, 2½ a 3; *Lugs*, factory, none; *Planters'* ditto, 3½ a 5; *Leaf*, inferior to common, 5½ a 6; fair to fine, 6½ a 7; choice and selections, 6½ a 9 per lb. From the 1st September to the close of December the demand was moderately fair, the arrivals during that time being about 5,000 hhds., while the sales exceeded 10,000 hhds. In prices there was a downward tendency from the middle of October, and on the 31st December our quotations were, for *Frosted*, 2 a 2½; *Lugs*, factory, none; *Planters'* ditto, 3 a 4; *Leaf*, inferior to common, 4½ a 5; fair to fine, 5½ a 6; choice and selections, 6½ a 7 cents per lb.

The first hoghead of the *new crop* reached here on the 18th October, and in January some few parcels of new came to market, and found buyers at rates ¼ a ½ a cent below the closing figures of December; but it was not until the middle of March that any considerable arrivals took place. From that time until the end of April the receipts were on a pretty liberal scale, and the demand at the same time was fair, and was freely met by factors generally. In this period buyers gradually obtained some further advantage in prices, and on the 1st May we quoted, for *Lugs*, factory, 2 a 2½; *Planters'* ditto, 3 a 3½; *Leaf*, inferior to common, 3½ a 4½; fair to fine, 4½ a 5; choice and selections, 5½ a 6 cents per lb. Early in May a number of buyers who had previously held aloof entered the market, and an active demand sprung up, which continued unabated for some sixty days, the sales in that time reaching nearly 30,000 hhds. The consequences of these exceedingly heavy transactions were that the stock on the market (notwithstanding the unusual extent of the receipts) was reduced to a very moderate quantity, and that prices gradually improved, until at the commencement of July our figures were advanced to the following range; *Lugs*, factory, 2½ a 3½; *Planters'* 3½ a 4; *Leaf*, inferior to common, 4½ a 4½; fair to fine, 5 a 5½; choice and selections, 6 a 7 cents per lb. At about these rates some 6,000 hhds. changed hands during July, the demand being fair, though not animated, and the stock on sale being too limited to admit of any very extensive operations. During the past month the inquiry has been more brisk, and the sales reported embrace some 6,500 hhds., including some parcels which had previously changed hands, and were re-sold. Under the influence of this improved demand prices have again taken a start upward within the past three weeks, and we now quote, for *Lugs*, factory, 3 a 3½; *Planters'* ditto, 3½ a 4½; *Leaf*, inferior to common, 4½ a 5½; fair to fine, 5½ a 6; choice and selections, 6½ a 7½ cents per lb. We close our tables with a stock in port of 18,831 hhds., though the quantity immediately on sale is estimated not to exceed 4,000 hhds. It may be proper to remark, however, that in addition to this amount there are probably 6,000 to 8,000 hhds. held in second hand, which may, in certain contingencies, be again placed upon the market. The total receipts at this port since 1st September, as shown by our tables, are 89,675 hhds., which amount includes 11,740 hhds. strips and 2,118 hhds. stems. The quantity inspected since 1st September is 64,645 hhds., of which 5,615 hhds. were Mason county.

Early in the season it was very generally known that the crop would certainly be a large one, and in view of the experience of previous years as to the effect of a heavy accumulation of stock upon our market, a majority, both of shippers in the country and of factors here, were in favor of speedy sales. This course has been generally pursued, and its advantages have been fully made manifest. The extent of our receipts (which would have been several thousand hogheads greater but for the low stage of water in the rivers above for several weeks past) shows that the estimates of the crop were about correct. Its quality, however, was probably overestimated, as the reports received from the interior last fall led to the expectation of something unusually fine, whereas the receipts from most sec-

tions have been decidedly below the average quality of former years. And here again we take the liberty to call the attention of planters to the necessity, if they would protect their own interest, and the interest of the trade generally, of bestowing more care upon the *handling, sorting and prizing* of their crops. Their negligence in these particulars has been matter of serious complaint for some years past.

With regard to the growing crop, we have briefly to remark that the accounts received thus far have been of a decidedly discouraging character. Complaints of scarcity of plants, of want of proper seasons for planting, and of long continued drought since the planting was made, have been very general, and we hear of no section of the tobacco growing region (unless it may be Missouri) in which anything like an average crop is expected. It is quite too early, however, to determine what the extent of the crop is likely to be, and at a later period we may take occasion again to advert to its prospects.

WESTERN PRODUCE.—TRADE OF NEW-ORLEANS, 1851-2.—In this department of our trade there is embraced a vast variety of products, which contribute largely to the value of our commerce with the interior, but our limited space will only permit us to review briefly the course of the market in a few of the most prominent articles. There has been some increase in the supply of breadstuffs, as compared with last year, and the average of prices has been lower. The receipts of flour are 927,212 barrels, against 941,106 last year, and of Indian corn they are equal to 3,750,000 bushels, against 3,300,000 bushels last year. Of wheat the supply has been light, and the receipts, which have been mostly to go forward to Alabama, Georgia, &c., have only reached 130,000 bushels, against 180,000 bushels last year. The few sales that have taken place have been at the extreme range of 65 a 85 cents, though mostly at about 70 cents per bushel. Of corn meal there has been received only 2,514 barrels, against 3,662 barrels last year. The total exports of flour since 1st September amount to 544,711 barrels, against 563,418 barrels to same date last year. Of this quantity, 138,569 barrels were shipped to Great Britain, 70,445 to West Indies, &c., and the remainder to coastwise ports. Of Indian corn, the total exports have been equal to 2,182,000 bushels, against 1,300,000 bushels last year. Of this quantity 382,000 were shipped to Great Britain and Ireland, 122,000 to the West Indies, &c., and the remainder to coastwise ports. The following tables will indicate the course of prices for flour and corn, as they present the highest and lowest points of the market in each month, the range being according to quality.

PRICES OF FLOUR, NEW-ORLEANS, 1851-2.

	Highest	Lowest
September per bbl. \$3 50 a 5 00	\$3 37½	a 4 75
October.....	3 75 a 5 00	3 40 a 4 50
November.....	3 55 a 4 75	3 40 a 4 50
December.....	3 90 a 4 75	3 55 a 4 37½
January.....	4 00 a 5 50	3 60 a 5 37½
February.....	4 25 a 5 12½	4 00 a 4 50
March.....	4 25 a 5 00	3 75 a 4 25
April.....	3 75 a 4 12½	3 30 a 3 90
May.....	3 60 a 3 80	3 25 a 3 75
June.....	3 80 a 4 37½	3 45 a 4 12½
July.....	3 75 a 4 25	3 50 a 3 87½
August.....	3 75 a 5 00	3 50 a 3 87½

PRICES OF CORN IN SACKS, NEW-ORLEANS, 1851-2.

	Highest	Lowest
September.....cents per bushel 35 a 56	32 a 55	
October.....	40 a 58	33 a 42
November.....	48 a 52	33 a 42
December.....	50 a 56	41 a 46
January.....	54 a 57	44 a 47
February.....	51 a 54	46 a 50
March.....	50 a 54	42 a 46
April.....	48 a 50	42 a
May.....	47 a 53	40 a 47
June.....	48 a 53	45 a 52
July.....	50 a 62	48 a 52
August.....	52 a 60	48 a 51

The annexed table shows the exports of breadstuffs from the United States to Great Britain and Ireland since 1st September, compared with the same period last year.

	1851-2.	1850-51.
Flour.....barrels	1,359,882	1,379,643
Corn meal.....	1,750	5,553
Wheat.....bushels	1,520,307	1,266,630
Corn.....	1,547,383	2,197,253

With respect to the supply of breadstuffs for the coming year, it is likely to be most ample; for it is understood that the yield throughout the country has been more generally abundant than in any previous year, at least for a long period. Even in the Southern States, where the grain crops have been almost a total failure for two years in succession, the harvest is ample, and large sections of country, which have depended upon the West for supplies, are likely to have a surplus to send to market. The crops of Europe, also, are generally represented as giving favorable promise, and the probabilities would

seem to indicate a lower range of prices than the American farmer has realized for some years past.

The article of pork has presented unusual interest the past season. It was declared that there was a further deficiency in the supply of hogs, as compared with the previous year, while it was evident that the consumption was rapidly on the increase, as the increase of population was large and constant, besides which the failure of the corn crops at the South had involved at the same time the failure of the usual home supply of pork, and on these considerations the market for hogs opened in the West at what appeared, to some at least, to be high prices. The sequel, however, has sustained the views of the purchasers, though we doubt whether any one anticipated so high a range of prices as the market has attained within the past few months, a range that has scarcely been approached since 1838. In beef there has been some increase of supply, but prices, nevertheless, have ranged considerably higher than last year. The following tables show the highest and lowest points of the market in each month.

PRICES OF PORK AT NEW-ORLEANS, 1851-2.

	Mess.		Prime.	
	Highest per barrel.	Lowest per barrel.	Highest per barrel.	Lowest per barrel.
September.....	\$16 50 a 17 00	\$16 00	a 16 50	\$15 00 a 16 00
October.....	15 25 a 16 00	14 00	a 14 50	14 50 a 13 00
November.....	14 75 a 15 00	13 50	a 14 25	13 50 a 13 00
December.....	14 50 a 15 00	12 50	a 13 50	12 00 a 12 75
January.....	15 00 a 15 50	12 75	a 13 75	13 50 a 12 00
February.....	15 50 a 15 75	14 87½	a 15 25	13 50 a 13 25
March.....	16 50 a 17 00	15 00	a 15 50	14 00 a 13 25
April.....	17 75 a 18 00	16 50	a 16 75	15 00 a 13 50
May.....	17 25 a 17 62½	16 75	a 17 00	15 00 a 15 50
June.....	20 00 a 21 00	17 00	a 17 50	18 00 a 15 00
July.....	20 00 a 21 00	19 75	a 20 50	18 00 a 18 00
August.....	21 50 a 22 50	21 00	a 22 00	18 25 a 18 25

PRICES OF BEEF.

	Mess.		Prime.	
	Highest per barrel.	Lowest per barrel.	Highest per barrel.	Lowest per barrel.
September.....	\$14 50 a 15 00	\$14 50 a 15 00	\$11 50 a 12 50	\$10 50 a 11 00
October.....	14 50 a 15 00	14 00 a 15 00	11 50 a 12 50	11 50 a 12 50
November.....	14 50 a 15 00	14 00 a 15 00	11 00 a 12 00	11 00 a 12 00
December.....	12 00 a 13 00	11 00 a 12 00	9 50 a 10 00	7 00 a 7 75
January.....	11 00 a 12 00	11 00 a 11 50	7 50 a 8 00	7 50 a 7 75
February.....	11 00 a 12 00	11 00 a 12 00	7 50 a 8 00	7 50 a 7 75
March.....	13 00 a 13 50	12 00 a	9 00 a 9 25	7 50 a 8 00
April.....	13 00 a 13 50	13 00 a 13 50	9 50 a 9 75	9 00 a 9 25
May.....	13 25 a 14 00	13 00 a 13 50	10 00 a 11 00	9 50 a 9 75
June.....	14 00 a 14 50	13 25 a 14 00	13 00 a 13 75	10 00 a 11 00
July.....	14 50 a 15 00	14 00 a 14 50	13 00 a 13 75	13 00 a 13 50
August.....	14 50 a 15 00	14 50 a 15 00	13 00 a 13 50	13 00 a 13 50

The receipts of lard have rather exceeded those of last year, but the average of prices has been about the same. The total exports since 1st September (all packages being reduced to kegs) are equal to 792,543 kegs, against 738,956 kegs last year. Of this quantity, 222,524 kegs were exported to foreign ports, against 188,353 kegs last year, Great Britain taking 61,923 kegs, against 41,663 last year. The course of the market will be observed by reference to the annexed table, which shows the highest and lowest points in each month, the lowest figures being for inferior in barrels, and the highest for prime in kegs.

PRICES OF LARD, NEW-ORLEANS, 1851-52.

	Highest	Lowest
September.....	8½ a 12½	8½ a 12
October.....	8½ a 12	8 a 10½
November.....	8 a 10½	6½ a 9
December.....	6½ a 8½	6½ a 8
January.....	6½ a 9½	5 a 8½
February.....	6 a 9½	5 a 9½
March.....	7 a 9½	6 a 9½

	Highest	Lowest
April.....	7 a 11	6½ a 9½
May.....	6½ a 11	6½ a 11
June.....	8 a 10½	7 a 10½
July.....	8 a 11½	8 a 8½
August.....	10 a 13	10 a 12

LEAD.—The discovery of gold in California has greatly interfered with the production of this article, and our receipts the past year have fallen to 267,564 pigs, which is the lowest amount since 1837. Our largest receipts were 785,000 pigs in 1846-7. The great bulk of the receipts has been forwarded to the Northern cities, the sales in this market scarcely reaching 20,000 pigs for the entire season. The extreme range of prices has been \$3 75 per 100 lbs. in October, and \$4 70 in June, when it was shipped freight free. The total exports since 1st September are 256,939 pigs, against 320,608 pigs last year.

HEMP.—There has been a further reduction in the supply of this article, the receipts since 1st September being 17,149 bales, against 25,116 bales last year. As in the case of lead, nearly all that is re-

FREIGHTS.—The freight market has presented considerable fluctuations during the past season, though it has generally been characterized by rather more steadiness than we have had occasion to notice for several years past, the extreme range for Cotton to Liverpool being $\frac{1}{2}$ d. to $\frac{3}{4}$ d. per lb. The following table, which shows the highest and lowest rates in each month, for cotton to Liverpool, will sufficiently indicate the course of the market:

	Highest.	Lowest.
September.....	$\frac{3}{4}$ d.	$\frac{3}{4}$ d.
October.....	$\frac{5}{8}$ d.	7-16
November.....	$\frac{5}{8}$ d.	7-16
December.....	$\frac{5}{8}$ d.	15-32
January.....	$\frac{5}{8}$ d.	7-16
February.....	5-16	13-32
March.....	5-16	9-16
April.....	9-16	$\frac{5}{8}$ d.
May.....	$\frac{1}{2}$ d.	9-16
June.....	$\frac{1}{2}$ d.	$\frac{5}{8}$ d.
July.....	$\frac{1}{2}$ d.	$\frac{5}{8}$ d.
August.....	5-16	$\frac{5}{8}$ d.

The total number of arrivals from sea since 1st September, 1851, is 2,351, viz.: 807 ships, 213 steamships, 371 barks, 287 brigs, and 673 schooners; and the entries at the custom-house for the year ended 30th June, 1851, were as follows: whole number of vessels 2,266; tonnage, 910,855. The increase, compared with last year, is 212 vessels and 142,827 tons. Included in the arrivals are 412 foreign vessels, from foreign ports, with a total measurement of 185,386 tons. This is an increase on last year of 80 vessels and 48,388 tons.

COMMERCE OF NEW-ORLEANS.—TONNAGE ENTERED.

3d quarter, July to September, 1851.

	No. of Vessels.	Tonnage.
American from foreign ports.....	74.....	26,187 07
Foreign.....	30.....	6,564 47
Coastwise.....	223.....	74,347 00
	327.....	107,098 54

4th quarter, October to December, 1851.

American from foreign ports.....	170.....	61,776 86
Foreign.....	148.....	70,916 01
Coastwise.....	386.....	173,909 15
	704.....	306,602 07

1st quarter, January to March, 1852.

American from foreign ports.....	175.....	82,209 27
Foreign.....	140.....	67,039 94
Coastwise.....	305.....	110,395 36
	620.....	259,644 62

2d quarter, April to June, 1852.

American from foreign ports.....	155.....	71,946 77
Foreign.....	95.....	40,867 08
Coastwise.....	365.....	124,695 85
	615.....	237,509 75

Recapitulation.

Total 3d quarter, 1851.....	327.....	107,998 54
4th " ".....	704.....	306,602 07
1st " 1852.....	620.....	259,644 62
2d " ".....	615.....	237,509 75
Total to June, 30th, 1852.....	2266.....	910,855 08
Total the year previous.....	2054.....	768,028 04

Increase this year.....212.....142,827,04

TONNAGE CLEARED.

3d quarter, July to September, 1851.

American for foreign ports.....	105.....	43,939 13
Foreign.....	48.....	16,001 44
Coastwise.....	187.....	63,584 07
	340.....	123,524 64

4th quarter, October to December, 1851.

American for foreign ports.....	184.....	96,133 20
Foreign.....	58.....	21,414 00
Coastwise.....	269.....	94,987 65
	514.....	212,534 85

1st quarter, January to March, 1852.

American for foreign ports.....	189.....	101,406 49
Foreign.....	173.....	82,114 83
Coastwise.....	316.....	130,282 29
	678.....	213,803 66

2d quarter, April to June, 1852.

American for foreign ports.....	240.....	128,424 54
Foreign.....	122.....	56,031 93
Coastwise.....	308.....	94,722 84
	670.....	279,179 41

Recapitulation.

Total 3d quarter, 1851.....	340.....	123,524 64
4th " ".....	514.....	212,534 85
1st " 1852.....	678.....	213,803 66
2d " ".....	670.....	279,179 41

Total to June, 30th, 1852.....	2202.....	929,042 66
Total the year previous.....	2197.....	775,081 69

Increase this year.....105.....154,960 92

EXPORTS—NEW-ORLEANS, 1851-2.

AMERICAN PRODUCE.

American Vessels to Foreign Countries.

3d quarter, 1851.....	\$4,058,085
4th " ".....	8,936,430
1st " 1852.....	8,542,789
2d " ".....	11,931,884
	33,469,188

Foreign Vessels to Foreign Countries.

3d quarter, 1851.....	\$1,302,995
4th " ".....	969,215
1st " 1852.....	7,478,048
2d " ".....	4,856,751
	14,607,009

Coastwise.

3d quarter, 1851.....	\$4,538,830
4th " ".....	6,162,449
1st " 1852.....	11,998,214
2d " ".....	7,068,879

Total foreign.....	28,268,372
Coastwise.....	\$48,076,197
	28,268,372

Grand total.....76,344,569

FOREIGN PRODUCE.

American Vessels to Foreign Countries.

3d quarter, 1851.....	\$47,332
4th " ".....	31,805
1st " 1852.....	60,279
2d " ".....	66,520
	\$205,936

Foreign Vessels to Foreign Countries.

3d quarter, 1851.....	\$ 3,875
4th " ".....	8,798
1st " 1852.....	20,950
2d " ".....	11,157
	44,780
Grand total.....	\$250,716

RECEIPTS BY THE NEW CANAL, NEW-ORLEANS.

Statement of produce received in the New Basin,
for the year ending 31st August, 1852. Furnished
by Capt. James Stockton.

Cotton—bales.....	40,650
Lumber—yellow pine and cypress—feet.....	30,570,000
Wood—oak, ash and pine—cords.....	28,206
Bricks.....	19,329,000
Sand—bbls.....	194,850
Shells—bbls.....	27,000
Charcoal—bbls.....	114,360
Tar—bbls.....	1,872
—kegs.....	12,066
Shingles.....	1,844,000
Laths.....	5,090,000
Staves.....	150,000
Sash and doors—pairs.....	13,900
Spirits turpentine—bbls.....	2,408
Rosin—bbls.....	11,715
Salt, sacks.....	32,763
Cotton Gins.....	319
Hides.....	3,024
Corn Mills.....	19
Domestics—bales.....	1,478
Sheep skins—bales.....	4

Hay—bales.....	20
Buckets—dozen.....	1,006
Tobacco—leaf—boxes.....	844
Merchandise—boxes.....	53
Moss—bales.....	30
Cotton seed—bags.....	14
Wool—bags.....	6
Sugar—bbls.....	870
Molasses—bbls.....	893
Fish—bbls.....	130
Camphene—bbls.....	10
Knees, white and live oak.....	1,165
Pickets.....	13,000
Clap boards.....	165,000
Gunny bags—bales.....	285
Horned Cattle.....	123
Paper—bundles.....	110
Barrels—empty.....	1,150
Rags—bales.....	4
Mahogany—logs.....	20
Deer Skins—bales.....	16
Almonds—sacks.....	35
Bottles, empty—casks.....	17
White oak bark—cords.....	35
Cedar logs.....	240
Turpentine, raw—bbls.....	73

EXPORTS OF COTTON AND TOBACCO, FROM NEW-ORLEANS, FOR THE YEAR ENDING 31ST AUGUST, 1852.

Whither exported.	Cotton Bales.	Tobacco Hhds.	Whither exported.	Cotton Bales.	Tobacco Hhds.
Liverpool.....	751,172	7,844	Spain and Gibraltar.....	47,645	7,663
London.....	—	5,197	Havana, Mexico, &c.....	11,919	—
Glasgow and Greenock.....	11,700	—	Genoa, Trieste, &c.....	75,093	11,134
Cowes, Falmouth, &c.....	7,311	982	China.....	—	—
Cork, Belfast, &c.....	2,159	—	Other foreign ports.....	15,046	3,533
Havre.....	183,054	9,056	New-York.....	101,938	13,347
Bordeaux.....	1,554	1,916	Boston.....	128,629	1,941
Marseilles.....	4,308	2,976	Providence, R. I.....	4,561	—
Nantz, Cotte and Rouen.....	7,338	—	Philadelphia.....	15,594	1,296
Amsterdam.....	259	1,157	Baltimore.....	4,745	385
Rotterdam and Ghent.....	1,507	222	Portsmouth.....	—	—
Bremen.....	10,248	15,515	Other coastwise ports.....	45	230
Antwerp, &c.....	24,562	7,618	Western States.....	1,200	—
Hamburg.....	17,694	475			
Gottenburg.....	6,634	1,229	Total.....	1,435,815	93,715

RECAPITULATION.

Great Britain.....	772,242	14,023	Coastwise.....	256,712	17,199
France.....	196,254	13,948			
North of Europe.....	75,950	26,814	Total.....	1,435,815	93,715
South of Europe & China.....	134,657	21,731			

EXPORTS OF FLOUR, PORK, BACON, LARD, BEEF, LEAD, WHISKY, AND CORN, FROM 1ST SEPT., 1851, TO 31ST AUGUST, 1852.

Ports	Flour, Barrels	Pork, Barrels	Bacon, Hhds	Lard, Kegs	Beef, Barrels	Lead, Pigs	Whiskey Barrels	Corn Sacks
New-York.....	94,638	57,356	12,685	256,738	9,295	149,781	6,553	133,488
Boston.....	61,124	62,702	5,431	208,613	12,285	73,895	1,845	148,524
Philadelphia.....	24	4,849	2,772	20,686	200	31,113	1,888	13,905
Baltimore.....	—	14,164	2,334	32,318	—	—	2,538	—
Other coastwise.....	179,911	25,846	26,173	51,664	752	1,645	63,311	336,719
Great Britain.....	138,569	1,263	—	61,923	15,109	—	—	192,283
Cuba.....	6,681	946	812	158,447	15	—	—	37,466
Other for. ports.....	63,764	5,622	96	2,154	551	500	21	12,384
Total.....	544,711	172,748	50,303	792,543	36,207	256,939	81,156	874,774

IMPORTS INTO NEW-ORLEANS FROM THE INTERIOR, FROM THE 1ST SEPTEMBER TO THE 31ST AUGUST, 1851-52.

Apples,.....bbls.	20356	Bale Rope,.....coils	90272	Beef, dried.....lbs.	26100
Bacon, asst. casks, &c.....	46734	Beans,.....bbls	6598	Buffalo Robes,.....packs	1300
Bacon,.....bbls. & boxes	3626	Butter,.....kegs	44786	Corn Meal,.....bbls	2514
Bacon, Hams,.....hbls	38188	Butter,.....bbls	1778	Corn in ears,.....bbls	163008
Bacon in bulk,.....lbs	281240	Beeswax,.....bbls	171	Corn, shelled,.....sacks	1397132
Bagging,.....pieces	60044	Beef,.....bbls. & tierces	52850	Cheese,.....boxes	72441

IMPORTS INTO NEW-ORLEANS FROM THE INTERIOR—continued.

COTTON.	La. & Mi. bales	967679	Hay, bales	53434	Pork, hhds	2478
	Lake, bales	15202	Iron, pig, tons	62	Pork, in bulk, lbs	8800000
	N. Ala. & Ten., bales	304153	Lard, hhds	57	Porter and ale, bbls	406
	Arkansas, bales	85430	Lard, tcs. & bbls	125496	Packing yarn, reels	2093
	Mongomery, &c., ..	21760	Lard, kegs	157689	Skins, deer, packs	998
	Mobile, bales	15606	Lime, western bbls	42305	Shot, kegs	2704
	Florida, do	4907	Lead, pigs	267564	Sugar, hhds	141046
	Texas, do	14546	Lead, bar, kegs	1138	Sugar, bbls	11213
	Candles, boxes	53936	Lead, white, kegs	1368	Soap, boxes	5308
	Cider, bbls	300	Molasses, bbls	233923	Shingles,	40000
	Coal, western, bbls	850000	Oats, bbls and sks	463273	Staves,	7319000
	Dried Peaches, bbls	336	Onions, bbls	17184	Tallow, bbls	1307
	Dried Apples, bbls	468	Oil, linseed, bbls	758	Tobacco, lead, hhds	89675
	Flaxseed, tierces	519	Oil, castor, bbls	4291	Tobacco, chew, kegs	4779
	Flour, bbls	927212	Oil, lard, bbls	14114	Tobacco, bales	162
	Furs, hhds., boxes, bbls	2136	Pickles, kegs & bbls	381	Twine, bundles	2341
	Feathers, bags	2065	Potatoes, bbls	228095	Whisky, bbls	146352
	Hemp, bales	17149	Pork, tcs. & bbls	276606	Window glass, bxs	19251
	Hides,	123687	Pork, boxes	303	Wheat, bbls. & sacks	64918

VALUE OF PRODUCE OF THE INTERIOR.

A Table, showing the receipts of the principal articles from the interior, during the year ending 31st August, 1852, with their estimated average and total value.

Articles.	Amount	Average	Value Dollars	Articles.	Amount	Average	Value Dollars
Apples bbls.	20356	\$3 00	61068	Lead, bar, kegs & boxes,	1138	20 00	22760
Bacon, ass'd, hhds. & casks,	46734	75 00	3505050	Lead, white, kegs	1368	3 00	4104
Bacon, assorted, bxs	3626	35 00	126910	Molasses (estimated crop, galls. [1	8300000	22	4026000
Bacon, hams, hhds. and tcs,	38488	70 00	2694160	Oats, bbls. & sacks	463273	75	347454
Bacon, in bulk, pds.	281280	8	22502	Onions, bbls.	17184	21 00	34368
Bagging, pieces	60044	13 00	789572	Oil, linseed, bbls.	758	26 00	19708
Bale rope, coils	90272	7 50	677040	Oil, castor, bbls.	4291	28 00	120148
Beans, bbls.	6598	10 00	65980	Oil, lard, bbls.	14114	28 00	395192
Butter, kegs and firkins,	44786	8 00	358288	Potatoes, bbls.	228095	2 00	456190
Butter, bbls.	1778	30 00	53340	Pork, tcs. & bbls.	276606	16 00	4425696
Beeswax, bbls.	171	45 00	7695	Pork, boxes	303	35 00	10605
Beef, bbls.	41297	12 00	494724	Pork, hhds.	2478	80 00	198240
Beef, tierces	11523	15 00	172845	Pork, in bulk, pds.	8800000	7	616000
Beef, dried, pounds	26100	8	2088	Porter & ale, bbls.	406	10 00	4060
Buffalo robes, packs	1300	75 00	97500	Packing yarn, reels	2093	7 00	14651
Cotton, bales	1429183	34 00	48592322	Skins, deer, packs	998	25 00	24950
Corn meal, bbls.	2514	3 00	7542	Skins, bear, packs	16	15 00	240
Corn, in ear, bbls.	163008	70 00	114105	Shot, kegs	2704	25 00	67600
Corn, shelled, sacks	1397132	1 20	1676558	Soap, boxes	5308	3 00	15924
Cheese, boxes	72441	3 50	253543	Staves, M.	7319	38 00	278122
Candles, boxes	53936	6 00	323616	Sugar (estimated cp.) hhds,	236547	50 00	11827350
Cider, bbls.	300	3 00	900	Spanish moss, bales	4372	8 00	34976
Coal, western, bbls.	850000	50 00	425000	Tallow, bbls.	1307	20 00	26140
Dried apples and peaches,	804	5 00	4020	Tobacco, leaf, hhds.	75816	75 00	5686200
Feathers, bags	2065	35 00	72275	Tobacco, strips, hhds.	11741	125	1467625
Flaxseed, tierces	519	10 00	5190	Tobacco, stems, hhds.	2118	20 00	42360
Flour, bbls.	927212	4 00	3708848	Tobacco, chew'g kgs. and boxes,	4779	20 00	95580
Furs, hhds., bundles and boxes,	2136	—	1000000	Twine, buns, & boxes	2341	8 00	18728
Hemp, bales	17149	15 00	257235	Vinegar, bbls.	92	6 00	552
Hides,	123687	2 00	247374	Whisky, bbls.	146352	7 50	1097640
Hay, bales	53434	3 00	160302	Window glass, bxs.	19251	2 50	48127
Iron, pig, tons	62	30 00	1860	Wheat, bbls. & sks.	64918	2 00	129836
Lard, bbls. & tcs	125496	25 00	3137400	Other various articles estimated at,			5500000
Lard, kegs	157689	5 00	788445	Total value—dollars	..		108051708
Leather, bundles	7572	25 00	189300	Total in 1850-51, ..			106924083
Lime, western, bbls.	42305	1 25	52881	Total in 1849-50, ..			96897873
Lead, pigs	267564	3 20	856204	Total in 1848-49, ..			81989692

EXPORTS OF SUGAR AND MOLASSES, FROM NEW-ORLEANS, FOR THE YEAR ENDING 31ST AUGUST, 1852.

Whither exported.	SUGAR.		MOLASSES.	
	Hhds.	Bbls.	Hhds.	Bbls.
New-York.....	18,225	134	130	26,703
Philadelphia.....	6,489	946	93	6,384
Charleston, S.C.....	3,524	1,685	—	9,519
Savannah.....	729	99	—	2,873
Providence and Bristol, R. I.....	—	—	319	143
Boston.....	611	21	—	1,409
Baltimore.....	6,400	38	—	11,081
Norfolk, Va.....	4,585	338	41	5,323
Richmond.....				
Petersburg.....				
Alexandria, D.C.....	1,156	—	—	2,127
Mobile.....	5,327	—	—	16,187
Apal. & Pensacola.....	1,399	416	—	7,207
Other ports.....	2,348	2,857	—	5,151
Total.....	50,793	6,534	583	94,107

MONTHLY ARRIVALS OF SHIPS, BARKS, BRIGS, SCHOONERS AND STEAMBOATS, FROM SEPTEMBER 1, 1851, TO AUGUST 31ST, 1852.

Months	Ships	Barks	Brigs	Schrs	St Ships	Total	St. Boats
Sept.....	31	21	12	43	14	121	140
Oct.....	74	32	26	51	18	201	186
Nov.....	107	26	19	44	14	210	194
Dec.....	105	66	41	77	14	303	293
Jan.....	69	39	29	55	13	205	297
Feb.....	95	33	30	70	18	246	285
Mch.....	74	29	30	64	20	217	365
April.....	59	27	24	76	24	210	290
May.....	92	32	26	60	17	227	242
June.....	59	30	21	55	24	189	238
July.....	20	21	17	41	19	118	127
Aug.....	22	15	12	37	18	104	121
Tot.....	807	371	287	673	213	2,351	2,778

STATEMENT OF COTTON, NEW-ORLEANS.

Stock on hand 1st Sept., 1851.....	Bales	15390
Arrived since the 27th ultimo.....		2740
Arrived previously.....		1426443

Total receipts for 12 months.....	1429183
Add. made from waste and damaged cotton and samples, estimated,	1000
	1430183
	1445573
Exported since 27th ultimo.....	2716
Exported previously.....	1431899
Shipped to western states.....	1200

Total exports for 12 months.....	1435815
Stock on hand 1st Sept., 1852.....	Bales 9758

STATEMENT OF TOBACCO, NEW-ORLEANS.

Stock on hand 1st Sept., 1851.....	Hhds	23871
Arrived since the 27th ultimo.....		1252
Arrived previously.....		86423
Additional hhds. made from samples, repacking, &c.....		200
Total receipts for 12 months.....		89875
		113746

Exported since 27th ultimo....	1505
Exported previously.....	92210

Total exports for 12 months.....	93715
City consumption, baling, &c.....	1200—94915

Stock on hand 1st Sept., 1852.....	Hhds. 18831
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COMPARATIVE ARRIVALS, EXPORTS, AND STOCKS OF COTTON AND TOBACCO AT NEW-ORLEANS,

For ten years—from 1st September each year.

Years	COTTON—BALES			TOBACCO—HHDS		
	Arrivals	Exports	Stocks	Arr's	Exp'ts	Stocks
1851-52	1429183	1435815	9758	89675	93715	18831
1850-51	995036	997458	15390	64030	54501	23871
1849-50	837723	838591	16612	60304	57955	14842
1848-49	1142382	1167303	15480	52335	52806	13293
1847-48	1213805	1201897	37401	55882	60364	14851
1846-47	740669	724508	23493	55588	50376	22336
1845-46	1053633	1054857	6832	72896	62045	17924
1844-45	979238	984616	7556	71493	68679	7673
1843-44	910854	895375	12934	82435	84249	4859
1842-43	1089642	1068870	4700	492509	89891	4873

COMPARATIVE RATES OF EXCHANGE ON LONDON, PARIS AND NEW-YORK.

On the 1st of each month for three years past—sixty day bills

	1851-2.			1850-1.			1849-50.		
	London	Paris	New-York	London	Paris	New-York	London	Paris	New-York
Sept....	10½	5 12	2	9½	5 28	1½	8½	5 25	¾
Oct....	10½	5 15	2½	9½	5 28	1½	9½	5 30	¾
Nov....	9½	5 25	3½	7½	5 32	2½	9½	5 28	1½
Dec....	9½	5 20	2	8	5 30	1½	8	5 32	1½
Jan....	9½	5 20	2½	7½	5 28	2½	7½	5 35	1½
Feb....	8½	5 25	2½	7½	5 30	2½	7½	5 30	1½
Mar....	9	5 22	2½	7½	5 23	2½	7½	5 32	1½
April....	9	5 22	1½	10	5 10	¾	7½	5 35	1½
May....	8½	5 25	1½	10	5 12	¾	9½	5 27	¾
June....	9½	5 20	1½	10½	5 10	¾	9½	5 27	¾
July....	10½	5 20	1	10½	5 08	1½	9½	5 27	1½
Aug....	10	5 18	1½	9½	5 10	1½	9½	5 29	¾

MONTHLY ARRIVALS OF PLATEBOATS---NEW-ORLEANS

MONTHS.	Ohio.	Kentucky.	Indiana.	Virginia.	Pennsylvania.	Illinois.	Missouri.	Iowa.	Alabama.	Tennessee.	Mississippi.	TOTAL.
Sep.	3	..	5	..	..	..	..	..	..	1	..	9
Oct.	1	..	1	..	4	2	..	..	..	5	..	13
Nov.	1	..	..	..	..	..	..	..	..	..	..	1
Dec.	34	..	12	..	2	3	..	..	..	1	2	54
Jan.	58	11	43	6	..	..	..	..	..	3	..	124
Feb.	39	11	20	4	5	..	..	..	..	..	..	83
Mar.	88	7	77	..	10	3	..	..	..	30	..	215
Apr.	31	9	109	..	14	20	..	1	..	31	11	226
May	90	26	74	..	30	16	..	..	3	11	2	252
June	7	13	11	..	31	4	..	..	..	85	..	150
July	3	8	5	..	87	..	..	..	..	20	..	153
Aug.	2	3	1	..	..	..	1	1	..	59	..	37
Tot.	357	88	358	10	183	51	1	2	3	250	15	1318

Also about 150 from various states with cattle, sheep, hogs, lumber, &c., making a total of 1,468.

COMPARATIVE RATES OF FREIGHT, NEW-ORLEANS.

On Cotton and Tobacco to Liverpool, Havre and New-York, on the first of each month, for the past two years.

COTTON—PER POUND						
	1851-52			1850-51		
	Livpl.	Havre	N. Y.	Livpl.	Havre	N. Y.
Sept..	3 ^d	7 ^d ct	3 ^d ct	7-16d	7 ^d ct	1 ^d ct
Oct..	7-16	15-16	3 ^d	7-16	3 ^d	1 ^d
Nov..	7 ^d	1	3 ^d	3 ^d	2 ^d	1 ^d
Dec..	7-16	7 ^d	7 ^d	7-16	7 ^d	7 ^d
Jan..	7-16	7 ^d	7 ^d	13-32	7 ^d	3 ^d
Feb..	7-16	15-16	9-16	9-16	15-16	5 ^d
March	7 ^d	7 ^d	5 ^d	13-16	1 ^d	1
April..	9-16	1 ^d	3 ^d	3 ^d	3 ^d	1 ^d
May..	1-16	1 ^d	3 ^d	7 ^d	7 ^d	1 ^d
June..	3 ^d	3 ^d	3 ^d	3 ^d	1	1 ^d
July...	5-16	3 ^d	3 ^d	3 ^d	3 ^d	1 ^d
Aug..	3 ^d	3 ^d	3 ^d	7-16	..	1 ^d

TOBACCO—PER HOGSHEAD

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April.	May.	June.	July.	Aug.
35s 0d	\$..	\$ 8 00	10 00	8 00	8 00	40 0	..	45 0	35 0	30 0	30 0	30 0
\$ 4 50	4 00	..	..	..	..	..	6 00	7 00	7 75	4 00	3 50	3 00
32s 6d	\$ 7 00	2 00	2 00	5 00	5 00	7 00	9 00	5 50	6 00	6 00	4 50	4 50

IMPORTS OF SPECIE—NEW-ORLEANS.

For five years, from 1st Sep. to 31st Aug.

1851-52	\$6,278,523
1850-51	7,937,119
1849-50	3,792,662
1848-9	2,501,250
1847-8	1,845,808

FOREIGN MERCHANDISE, NEW-ORLEANS, DIRECT IMPORTS OF COFFEE, SUGAR AND SALT.

For three years, from September 1 to August 31.

	1851-2	1850-1	1849-50
Coffee, Havana.....bags	12525	10367	10627
Coffee, Rio.....bags	353616	274690	225013
Sugar, Havana.....boxes	25673	29292	18843
Salt, Liverpool.....sacks	580106	420838	468932
Salt, Turks Island, &c.....bush.	235952	419685	583183

NEW-ORLEANS MORTALITY, 1851-52.

From September 1st, 1851, to August 28, inclusive, 1852.—From Dr. Axson's New-Orleans Medical Journal.

Months 1851	Total	Under ten years	Colored	Zymotics	Nervous system	Respiratory system	Digestive system	Circulatory system	Generative system	Urinary system	Locomotor system	Integumentary system	Age	External causes	Non-sphyl	Sporadics
September.....	572	201	54	181	119	72	63	6	5	0	1	1	3	30	43	48
October.....	514	162	56	162	102	69	33	10	0	1	1	0	6	32	50	48
November.....	591	205	90	223	106	84	44	11	3	0	0	0	4	17	56	43
December.....	509	200	94	143	78	104	33	14	4	0	1	0	7	15	64	46
January, 1852.....	486	179	111	97	80	123	39	6	5	0	1	1	11	42	51	30
February.....	477	155	91	106	85	128	38	14	4	0	0	0	8	22	49	23
March.....	462	190	72	128	67	95	46	6	5	1	0	0	5	27	45	27
April.....	502	227	99	146	90	99	51	8	2	1	1	0	7	40	32	35
May.....	627	290	118	209	112	100	68	6	2	2	1	0	7	30	51	38
June.....	1163	506	144	757	104	74	101	8	4	2	3	1	6	26	41	36
July.....	769	301	108	339	126	68	61	2	9	3	1	2	2	67	56	33
August.....	883	305	141	360	143	125	68	6	9	1	7	1	15	48	63	39
Total deaths.....	7555	2921	1178	2861	1212	1141	645	97	52	11	17	6	81	396	601	446

Comparative Prices middling to fair Cottons, Sugar on the Levee, Molasses on the Levee, and Flour at New-Orleans, on the first of each month, from 1st September, 1851, to 31st August, 1852.

	Cotton	Sugar	Molasses	Flour
	cents	cents	cents	dollars
September... 9	a 10	3 ^d a 6 ^d	25 a 30	3 ^d a 5
October... 8	a 9 ^d	3 ^d a 6 ^d	23 a 30	3 ^d a 4 ^d
November... 7	a 8 ^d	3 a 6 ^d	18 a 27	3 ^d a 4 ^d
December... 7 ^d	a 8 ^d	2 ^d a 5 ^d	23 ^d a 24	3 ^d a 4 ^d
January... 7 ^d	a 8 ^d	2 a 5 ^d	17 a 20 ^d	3 ^d a 5 ^d
February... 7 ^d	a 8 ^d	2 a 5 ^d	15 a 20 ^d	4 a 5 ^d
March... 7 ^d	a 9	2 ^d a 5 ^d	20 a 25	4 ^d a 4 ^d
April... 7 ^d	a 9 ^d	2 ^d a 5 ^d	15 a 26	3 ^d a 4 ^d
May... 7 ^d	a 9 ^d	2 ^d a 5 ^d	20 a 28	3 ^d a 3 ^d
June... 9 ^d	a ..	3 ^d a 6	23 a 28	3 ^d a 3 ^d
July... 9 ^d	a ..	3 ^d a 6	20 a 28	3 ^d a 4 ^d
August... 9 ^d	a ..	3 ^d a 6 ^d	18 a 28	3 a 3 ^d

Statement of the Deposits and Coinage at the Branch Mint, New-Orleans, from the 1st of August, 1851, to the 31st July, 1852, inclusive.

GOLD DEPOSITS.

California gold bullion.....	\$5,621,695 22
Other gold bullion.....	139,608 79
Total gold deposits.....	\$5,961,304 01

SILVER DEPOSITS.

Silver extracted from California gold.....	\$36,568 23
Other silver bullion.....	105,777 97
Total silver deposits.....	142,346 20
Total value of gold and silver deposits.....	\$6,103,650 21
Last year.....	9,107,722 39

GOLD COINAGE.

	Pieces	Value
Double eagles.....	228,000	4,560,000
Eagles.....	131,500	1,315,000
Half eagles.....	8,000	40,000
Quarter eagles.....	98,000	245,000
Gold dollars.....	210,000	210,000
	675,500	6,370,000

SILVER COINAGE.

	Pieces	Value
Half dollars.....	264,000	132,000
Quarter dollars.....	144,000	36,000
Dimes.....	320,000	32,000
Half dimes.....	640,000	32,000
Three-cent pieces.....	120,000	3,600
	1,488,000	235,600
Total coinage.....	2,163,000	\$6,605,600
Last year.....	5,625,000	10,044,500

SPECIAL FORMS OF DISEASE TABULATED.

Months 1851	Fever	Cholera	Dysentery	Triennium Nascentium	Convulsions	Tetanus	Consumption	Still- born
September	114	5	29	23	42	7	50	14
October	71	8	49	18	28	8	49	15
November	73	78	37	29	27	4	60	24
December	50	28	29	9	19	7	56	29
January, 1852	48	2	17	13	20	7	72	27
February	63	0	20	10	27	4	67	24
March	63	1	26	9	17	6	63	24
April	47	6	21	12	34	2	60	14
May	29	63	42	6	49	4	67	26
June	69	559	24	10	55	4	58	12
July	78	173	21	7	38	10	48	24
August	160	101	44	22	51	3	103	30
Totals	865	1024	359	168	407	65	753	263

ANNUAL STATEMENT OF CHARITY HOSPITAL.

Months 1851	Admissions		Discharges		Deaths	
	Males	Females	Males	Females	Males	Females
September	1701	616	1652	516	109	29
October	1505	470	1359	438	118	25
November	1092	290	1006	322	139	32
December	1150	319	955	272	117	18
January, 1852	1175	343	858	364	115	28
February	1168	404	1052	371	132	33
March	939	323	915	362	113	29
April	699	287	693	282	84	28
May	829	384	703	302	143	60
June	988	422	791	349	142	71
July	1141	387	982	349	100	33
August	1288	507	1163	444	101	26
Total	13675	4752	12129	4431	1413	412

Admissions	Discharges	Deaths
Total number, 18,427	Total, 19,560	Total, 1825.
Of this number admitted there were	native of the United States	1,754
" " "	native of foreign countries	16,468
" " "	places of nativity	195

NORTH CAROLINA.—INTERNAL IMPROVEMENTS, REVENUES, ETC.—From the valuable work of Mr. Williams, upon North Carolina, lately issued from the press of Lippencott & Co., we extract the following:

In 1825, a Board of Internal Improvements was established, and the funds arising from the sales of Cherokee lands and dividends from stock owned by the State in the Bank of Cape Fear, set apart as the fund. (See Revised Statutes, p. 347.)

Present Internal Improvement Board—CALVIN GRAVES, of Caswell; THOMAS BRAGG, of Northampton.

1. The Dismal Swamp Canal, uniting the waters of Pasquotank and Elizabeth rivers in Virginia, was incorporated in 1790.

2. Cape Fear Navigation Company, incorporated in 1796, to improve the navigation of the Cape Fear River, from Averbysborough to the confluence of the Deep and Haw Rivers, the sum of \$100,000, to be subscribed in shares of one hundred dollars each; the state subscribed six hundred and fifty shares of stock.

3. Roanoke Navigation Company, incorporated in 1812, improving the navigation from Halifax to the Virginia line. The state owns \$50,000 in the stock of this company.

4. The Clubfoot and Harlow Creek Canal was incorporated in 1826; in which the state holds thirty shares.

5. The Cape Fear and Deep Navigation Company was incorporated in 1849, in which the state subscribed \$40,000.

6. Neuse River Navigation Company, incorporated in 1850. State subscribes \$40,000.

1. The Raleigh and Gaston Rail-road, from Raleigh to Gaston, on Roanoke River, was incorporated in 1835. This road was finished July 4th, 1839, at a

cost of about \$1,600,000. The state indorsed the bonds of this road in 1838, to the amount of \$500,000; and in 1840, \$300,000; for which she is liable, and has already in part paid; the road being mortgaged to save the state harmless, has been sold under the mortgage, and has been purchased by the state.

George W. Mordecai, President.

2. The Raleigh and Wilmington Rail-road, from the Roanoke River to Wilmington, was incorporated in 1833. The company was organized in March, 1836. This work was commenced in October, 1836, and finished in March, 1840, at a cost of \$1,500,000. Six hundred thousand were subscribed in the stock by the state; and by act of 1840, the state indorsed the bonds of this company for \$300,000, a part of which she has paid. The repairs of the road in 1850 increased the cost to another million. Gen. McRae, President.

3. The North Carolina Rail-road, from the Wilmington and Raleigh Rail-road, in Wayne county, to Charlotte, was incorporated in 1848, in which, on \$1,000,000 being subscribed by individual subscribers, \$2,000,000 is to be subscribed by the state. This road is now in progress. Hon. J. M. Moorehead, President.

1. Buncombe Turnpike, from the Saluda Gap by way of Asheville to the Tennessee line, was incorporated in 1824; capital stock to be \$30,000, in shares of fifty dollars each; the state owns one hundred shares. The company was organized in 1826; the first toll-gate was erected in October, 1827.

2. The Fayetteville and Western Plank-road, from Fayetteville to Salisbury, was incorporated in 1848. Stock, \$200,000, in shares of fifty dollars each. State subscribes one-fifth.

3. The Turnpike Road from Salisbury west to the Georgia line, was incorporated in 1848, and the lands in the state, in Cherokee, Macon and Haywood, as

well as the Cherokee bonds, are pledged to make the same.

The Public Treasury of North Carolina is divided into—

- I. Public Fund.
- II. Literary Fund.

The public fund is supplied—

I. From taxes collected by the sheriffs annually from the people, and paid into the treasury, which is levied on land and town property, poll, (white and black), money at interest, dividends and profits, stores, carriages, watches, and other property, bank tax, attorneys' licenses, dividends of Buncombe Turnpike Company, and some other sources, which amounted last year to \$179,768.

The literary fund is supplied—

II. The sales of vacant and swampy lands in the state, taxes on taverns, dividends on stock held by the state in the Bank of the State and Bank of Cape Fear, dividends on the stock held by the state in the Roanoke Navigation Company, and in the Cape Fear Navigation Company, tax on auctioneers, interest on bonds held by the board, which amounted last year to \$112,316.

THE ANNUAL EXPENSES OF THE STATE.

From the public fund for judiciary, about	\$30,000 00
Legislature	45,000 00
Executive	10,000 00
Principal and interest on bonds of Raleigh and Gaston Rail-road indorsed by the state	70,000 00
And other demands, which amounted last year (1850) to	228,173 00
The expenses paid from literary fund are, for common schools	107,339 00

LIABILITIES OF THE STATE.

For Raleigh and Gaston Railroad	\$500,000 00
For do. do. do.	106,000 00
State bonds	200,000 00
State bonds for Fayetteville and Western Turnpike Company	120,000 00
State bonds for Neuse and Tar rivers	65,000 00
State bonds for Cape Fear and Deep rivers	80,000 00
State bonds for North Carolina Rail-road	2,000,000 00
	\$3,071,000 00

POSTAGE LAW OF 1852.—This law is a liberal advance upon the previous one.

Small newspapers and periodicals, published monthly or oftener, and pamphlets not containing more than sixteen octavo pages each, when sent in single packages, weighing at least eight ounces, to one address, and pre-paid by affixing postage stamps thereto, shall be charged only half of a cent, for each ounce, or fraction of an ounce, notwithstanding the postage calculated on each separate article of such package would exceed that amount. That books, bound or unbound, not weighing over four pounds, shall be deemed mailable matter, and shall

be chargeable with postage at one cent an ounce for all distances under three thousand miles, and two cents an ounce for all distances over three thousand miles, to which fifty per cent. shall be added in all cases where the same may be sent without being pre-paid, and all printed matter chargeable by weight shall be weighed when dry.

Quarterly rates of postage when paid in advance, on Newspapers and Periodicals sent from the office of publication to actual subscribers, from and after the 30th of September, 1852.

Weekly newspapers (one copy only) sent to actual subscribers within the county where printed and published	Daily	Tri-weekly	Weekly free	Monthly
Newspapers and periodicals not exceeding 1½ oz. in weight, when circulated in the state where published	22½	9½	3½	4
Newspapers and periodicals of the weight of 3 oz. and under, sent to any part of the United States	45½	10½	6½	11½
Over 3 and not over 4 oz.	91	39	13	3
Over 4 and not over 5 oz.	\$1.36½	58½	19½	4½
Over 5 and not over 6 oz.	1.82	78½	26	6
Over 6 and not over 7 oz.	2.27½	97½	32½	7½
Over 7 and not over 8 oz.	2.73	117	39	9

DIRECTIONS.

1st. When the weight of any publication exceeds eight ounces, the same progressive rate of postage, laid down in the above table, must be charged.

2d. Publishers of newspapers and periodicals may send to each other from their respective offices of publication, free of postage, one copy of each publication; and may also send to each actual subscriber, inclosed in their publications, bills and receipts for the same free of postage.

3d. Postmasters are not entitled to receive newspapers free of postage under their franking privilege.

4th. If the publisher of any newspaper or periodical, after being three months previously notified that his publication is not taken out of the office to which it is sent for delivery, continues to forward such publication in the mail, the postmaster to whose office such publication is sent, will dispose of the same for the postage, unless the publisher shall pay it; and whenever any printed matter of any description, received during one quarter of the fiscal year, shall have remained in the office without being called for during the whole of any succeeding quarter, the postmaster of such office will sell the same, and credit the proceeds of such sale in his quarterly accounts in the usual manner.

5th. Quarterly payments in advance may be made either at the mailing office or the office of delivery. When made at the mailing office, satisfactory evidence of such payment must be exhibited to the postmaster at the office of delivery.

RAIL-ROAD AND CANAL STATISTICS.

Table of the Comparative Cost of Construction of Twenty-eight Rail-roads in the United States.

Names of the Rail-roads	Length of main track in miles	Length of branches in miles	Length of single track	Length of double track	Length of main track and branches	Cost per mile in dollars	Aggregate cost of the whole line
Western	117,804		64,50	53,75	117,804	\$78,103	\$8,032,813
Boston and Worcester	44,625			44,62			
“ branches		24	24		68,625	71,149	4,882,648
Fitchburgh	50,930			50,93			
“ branches		15,50	15,50		66,430	53,473	3,552,282
Boston and Maine	74,260		46,47	27,79			
“ branches		8,79	8,78		83,050	48,423	4,021,606
Boston and Providence	41,000		25,25	15,75			
“ branches		12	12		53	64,457	3,416,232
Boston and Lowell	25,750			25,75			
“ branches		1,75	1,75		27,500	70,750	1,945,646

RAIL-ROAD AND CANAL STATISTICS--continued.

Names of the Rail-roads	Length of main track in miles	Length of branches in miles	Length of single track	Length of double track	Length of main track and branches	Cost per mile in dollars	Aggregate cost of the whole line
Eastern	38,106		22,01	16			
“ branches		19,91	19,91		58,016	53,776	3,120,391
Old Colony	37,250		25,75	11,50			
“ branches		7,75	7,75		45	50,967	2,293,534
Norwich and Worcester	59		57,20	1,80			
“ branches		7	7		66	39,371	2,598,514
Providence and Worcester	43,410		38,24	5,17	43,410	42,036	1,824,796
Cheshire	53,616		53,64		53,646	51,062	2,739,318
Total	585,781	96,70	429,85	253,06	682,481	623,567	38,427,780
Albany and Schenectady	16,900		7,90	9,00	16,900	101,266	1,711,412
Hudson River	143,720				143,720	76,537	14,000,000
New-York and Erie	464				464	64,655	30,000,000
New-York and New-Haven	61		49,50	11,50	61	56,028	3,417,737
Syracuse and Utica	53			53	59	46,982	2,490,083
Utica and Schenectady	78			78	78	53,127	4,143,918
Rochester and Syracuse	104			104			
“ “ branches		9,50		9,50	113,500	37,000	4,200,000
Albany and West Stockbridge	38,250		35,75	2,50	38,250	50,480	1,930,895
New-York and Harlem	80				80	58,327	4,666,208
Total	1,038,870	9,50	93,15	267,50	1,048,370	544,402	66,560,253
Baltimore and Ohio	186				186	54,283	10,096,638
Baltimore and Washington branch	30,500				30,500	54,000	1,647,000
Philadelphia, Wilmington and Balt.	97				97	66,000	6,402,000
Baltimore and Susquehanna	69,500				69,500	47,450	3,297,775
Columbia	82				82	51,280	4,204,960
Pennsylvania Portage	36,666				36,666	50,920	1,867,032
Reading	94				94	128,803	12,107,482
Richmond and Petersburg	22				22	39,886	877,492
Total	617,666				617,666	492,622	40,500,379

RECAPITULATION.

	Length in miles	Cost	Average cost per mile
Aggregate of the Massachusetts rail-roads, main track	585.78		
“ “ “ branches	96.70		
	682.48	38,427,780	56.303
Aggregate of the New-York rail-roads and branches	1,048.37	66,560,253	63.489
“ miscellaneous rail-roads	617.66	40,500,379	65.570
General aggregate	2,348.51	\$145,488,412	61.949

The aggregate length of the main stems of these roads is 2,242,317 miles; of their branches is 106.20, making a total of 2,348,517 miles. The aggregate cost, divided by this last distance, which includes both main tracks and branches, makes the average cost per mile \$61.949. But as the branches cost much less than the main lines, the average cost of the main lines will exceed \$63,000 per mile.

The first estimate of the cost of the Erie Railroad was \$4,762,260; it is now ascertained that its cost, with double track and equipments, will exceed \$30,000,000.

“The Boston and Providence and Worcester roads were estimated to cost about \$1,000,000 each. The aggregate cost has reached to more than \$8,000,000.”

The estimate for the Baltimore and Ohio Rail-road, from Baltimore to Cumberland, was \$4,528,693; the cost \$9,662,374. The estimated cost of the Hudson River Rail-road was \$6,000,000; the cost will be \$14,000,000. The ratio between the estimates and the cost of most of the other rail-roads named in the above table, is nearly as great. In no one instance, according to my recollection, have any of them been constructed at a cost less than double the estimate. Some of these roads are of recent construction, estimated by practical engineers.

As my desire is to run out a fair parallel between canals and rail-roads, I will here subjoin a table of the cost of some of the leading canals in the country.

Table of the Cost per mile of the principal lines of Canals in the United States.

	Length in miles	Cost per mile of each canal	Aggregate cost in dollars	Average cost per mile
New-York and Erie	363	\$19,679	\$7,143,477	..
Oswego	38	14,870	565,402	..
Cayuga and Seneca	21	11,285	236,985	..
Chemung	23	29,678	682,594	..
Crooked Lake	8	19,597	156,775	..
Chenango	97	24,948	2,419,956	..
Genesee Valley	120	31,158	3,738,960	..
Schuykill	108	20,688	2,234,304	..
Ohio and branches	337	13,932	4,695,084	..
Muskingum	91	17,882	1,627,262	..
Walholding	25	24,290	607,250	..

Table of the Cost per mile of Canals in the United States—continued.

	Length	Cost per mile	Aggregate Cost	Average
Hocking.....	56	17,419	975,464	
Miami and Warren.....	85	14,559	1,237,515	
Miami extension.....	139	22,798	3,168,922	
Wabash and Erie.....	90	33,968	3,057,120	
Lehigh.....	87	51,207	4,455,009	
Susquehanna, Northwest branches.....	184	21,837	4,018,008	
Pennsylvania main line.....	277½	26,681	7,403,977	
Delaware division.....	59¾	20,633	1,232,821	
James River and Kanawha.....	147	34,150	5,020,050	
Twenty canals.....	2,356	471,268	54,676,936	\$23,207

SOUTH CAROLINA—RAILROADS OF, 1852.

Names of Rail-roads	Completed Miles	In progress Miles	Proj'd Miles
1. South Carolina—from Charleston to Hamburg.....	136		
2. Columbia Branch—from Branchville to Columbia.....	67		
3. Camden Branch—from Junction (43 miles from Branchville) to Camden.....	37		
4. Wilmington to Manchester—from Camden Junction to Wilmington, N. C. (total 168 miles).....	34	92	
5. Charlotte and South Carolina—from Columbia to Charlotte, N. C. (total 112 miles).....	78	18	
6. Greenville and Columbia—from Columbia to Greenville.....	80	61	
7. Union and Spartanburg—from Alston on Greenville and Columbia (No. 6) to Union and Spartanburg.....			66
8. Laurens—from Newbury Court-house (on No. 6) to Laurens).....	75	8	
9. Abbeville Branch—from Cokesbury (on No. 6) to Abbeville.....		12	
10. Anderson Branch—from — (on No. 6) to Anderson Court-House.....		11	
11. Raburn Gap—from Anderson Court-house through South Carolina, Georgia, North Carolina, and Tennessee, to a junction with Hiwassee Rail road (about 170 miles).....			38
Total.....	447	203	98

RECAPITULATION.

Length of rail-road completed.....	447 miles.
“ “ in progress.....	203 “
“ “ projected.....	98 “
Total length of rail-roads.....	748 “

STEAMBOAT ACCIDENTS, 1852.

	No. of Steamers.	Lives lost	Persons injured.
January.....	6	116	21
February.....	2	10	2
March.....	2	15	13
April.....	5	147	35
May.....	1	1	9
June.....	1	3	—
July.....	3	140	20
Total.....	20	428	100

ST. LOUIS—COMMERCE OF.—Imports into St. Louis by the river for two years commencing January 1st, 1850, and ending December 31st, 1851.

Articles.	1851.	1850.
Apples, green, bbls.....	13,094..	20,291
“ dried, bbls. & sacks.....	20,642½	14,766
Axes, boxes.....	692..	1,875
Bacon, casks.....	76,183½	27,106
“ boxes.....	962..	6,195
“ bulk lbs.....	310,495..	558,703
Bagging, pieces.....	2,765..	1,262
Barley, bushels.....	149,859..	72,591
Beans, barrels.....	1,862..	1,378
“ sacks.....	8,156..	3,017
Beef, barrels.....	19,119..	11,423
“ ½ do.....	1,854..	775
“ tierces.....	—	—
Beeswax, sacks, bbls., bxs.,	650½	
Boots, boxes.....	19,735..	27,160
“ trunks.....	680..	2,800
Brandy, bbls.....	2,855..	5,723

Articles.	1851.	1852.
Buffalo robes.....	95,844..	64,654
Butter, bbls.....	2,181..	1,926
“ kegs.....	4,515½	5,349
“ firkins.....	3,636..	3,234
Candles, sperm, boxes.....	139..	496
“ tallow, “.....	2,092..	2,806
Cattle.....	1,819..	1,376
Cheese, boxes.....	31,340..	26,381½
“ casks.....	422..	—
Cider, barrels.....	540½	801
Cigars, foreign, boxes, 1000 } each.....	1,098..	26,381
Cigars, domestic, boxes, } 1000 each.....	938..	1,633
Coffee, sacks.....	103,123..	73,281
Corn, bushels.....	1,834,689..	1,016,077
Cotton yarns, packages.....		
Dry goods, boxes.....	108,583..	94,162
“ packages.....	480,589..	362,936
“ bales.....	41,224..	26,298
Fish, kegs.....	1,810..	1,198
“ boxes.....	4,783..	5,843
“ barrels.....	6,864..	6,758
“ half barrels.....	2,105..	2,192
Feathers, sacks.....	1,143..	1,593
Flaxseed, barrels.....	4,400½	2,348
Flour, barrels.....	194,857..	326,072
“ half do.....	6,324..	7,321
Furs, packages.....	3,051..	2,180
Gin, barrels.....	939..	796
Ginseng, sacks and barrels.....	42..	877
Glass, boxes.....		
Hay, bales.....	23,280..	25,271
Hemp, bales.....	64,607..	62,698
Hemp seed, barrels.....	355..	750

Articles.	1851.	1850.
Hides.....	99,362..	86,815
Hogs.....	17,885..	12,226
Horses.....	833..	2,098
Iron bars, tons.....	9,387½	14,322
“ pigs.....	6,683½	4,468
“ castings.....	1,214..	2,485
Lard, barrels.....	60,646½	100,001
“ kegs.....	16,227..	17,433
Lead, pigs.....	521,734..	601,786
“ bars, lbs.....	38,250..	113,150
“ white, kegs.....	797..	8,975
“ red, “.....	91..	..
Malt liquors, barrels.....	8,200½	7,725
Molasses, “.....	40,530½	32,463
Nails, kegs.....	63,736..	88,813
Oakum, bales.....	1,506..	2,612
Oats, bushels.....	776,141..	712,617
Onions, sacks and barrels..	21,897..	14,629
Oil, sperm, barrels.....	1,677..	2,038
“ castor, “.....	459..	1,678
“ linseed, “.....	1,201½	2,587
“ train, “.....	394..	348
“ lard, “.....	212..	..
Paper, wrapping, reams.....	47,914..	50,506
“ writing, “.....	6,579..	10,990
Peaches, green, barrels.....	1,207..	743
“ dried, “.....	1,187..	2,260
“ “ sacks.....	4,273..	5,831
Peltries, packages.....	1,066..	1,362
Pork, barrels.....	114,899..	135,662
“ half do.....	3,052..	7,321
“ bulk.....	11,873,645..	11,474,041
Potatoes, bbls. and sacks..	58,650..	13,401
Powder, kegs.....	14,887..	18,505
Queensware, casks.....	2,720..	3,197
“ crates.....	2,453..	2,508
Rice, tierces.....	2,579½	3,389
Rope, hemp, coils.....	33,935..	33,442
“ Manila, “.....	1,643..	5,649
Rum, bbls.....	198..	706
Rye, bushels.....	7,656..	3,468
Salt, domestic, fine, barrels,	444..	805
“ coarse, “.....	37,200..	24,219
“ Liverpool B, sacks.....	17,302..	23,252
“ G. alum, “.....	119,867..	159,699
“ Turks I. “.....	46,594..	94,038
Sheep.....	6,061..	2,924
Shoes, boxes.....	12,057..	17,022
“ trunks.....	509..	2,618
Skins.....	5,152..	6,718
Soap, boxes.....	2,521..	..
Sugar, hhd.	29,722..	24,159
“ barrels.....	22,270..	12,273
“ boxes.....	16,098..	13,926
Tallow, casks.....	376..	439
“ barrels.....	1,175½	809
Tar, “.....	10,090..	1,126
“ kegs.....	5,800..	5,219
Tin plate, boxes.....	6,677..	9,993
Tea, chests.....	1,058..	2,873
“ half chests.....	2,694..	5,906
Tobacco, hhd.	10,286..	9,272
“ boxes, manufact'd.....	10,235..	10,309
Vinegar, barrels.....	755..	1,134
Wheat, bushels.....	1,644,861..	1,863,750
Whisky, barrels.....	48,541½	38,813
Wine.....	5,364½	8,972
Wool, sacks.....	1,684..	1,509

NOTE.—Several important articles in the trade of St. Louis are omitted in the list of imports to this city.

SAVANNAH, GEORGIA.—We regret not to have been able to procure later and more important information upon this city than appears under its appropriate head, or under that of Georgia Rail-Roads, United States Cotton Crop, &c., but we were disappointed from an unexpected quarter.

The returns of population by the last census. (below) and for which we are indebted to a friend, are supposed to fall short of the reality by at least 2,000.

CENSUS OF SAVANNAH—SEPT. 1852.

White males, 6 to 16 years of age.....	1,102
“ “ under 6 years of age.....	883
“ “ over 17 “ “.....	4,561
Total white males.....	6,551
White females, 5 to 15 years of age.....	1,162
“ “ under 6 “ “.....	1,040
“ “ over 15 “ “.....	3,451
Total white females.....	5,654
Total whites.....	12,201
Free colored males.....	248
“ females.....	376
Total free colored.....	624
Slave—males.....	2,305
“ females.....	3,268
Total slaves.....	5,474
Total population of the city.....	18,302

TRADE OF SAVANNAH IN COTTON.

Years	Receipts	Exports	Stocks
1846.....	236,029..	234,151..	7,787
1847.....	245,496..	243,233..	10,050
1848.....	406,906..	405,461..	11,500
1849.....	340,025..	341,700..	9,599
1850.....	312,294..	317,434..	4,500
1851-52.....	351,518..	353,068..	2,950
		Rice Cusks	Lumber Feet
1852. Exports foreign.....	9,937	15,804,500	
“ “ coastwise.....	29,992	9,704,000	
	39,929	25,508,500	

TEHUANTEPEC RAILROAD, ETC.—Since the preparation of our articles upon this subject, a company, formed under the Garay Grant and the transfers to Mackintosh & Hargous, have made surveys, &c., and partially organized. They have, however, been interrupted by the Mexican government, and the matter is now in the hands of the Executive and Congress of the United States. (For interesting papers on the subject, see De Bow's Review, vol. xiii. July to December, 1852.)

UNITED STATES CENSUS STATISTICS, 1850.

—Up to the present moment (November, 1852), no complete official report of this census has been published, except as to the aggregates of population and agriculture. We have nothing yet reliable upon manufactures, commerce, mortality, property, &c., except what has been given in our tables. This is much to be regretted, and is a great delinquency upon the part of government. Of what use is a census if we cannot get its results until they are stale and flat? It is otherwise in Europe. Our readers will therefore admit our apology for not presenting more of the returns, when we say that it has been impossible to obtain them in any satisfactory manner up to the last moment of our application at the census office, notwithstanding the attentions of Mr. Kennedy. Many rough estimates have been put forth, which we have thought not proper to insert in the volumes. In the course of a year or two we hope to publish a fourth volume, which shall be full upon the census of 1850, and with numerous tabular comparisons with former ones. The tables will also appear in our Review next year. We furnish, annexed, the latest official reports of commerce and navigation, which have been published at the time of going to press.

UNITED STATES NAVY, 1ST JANUARY, 1852.—

There are in the United States Navy 68 captains, 97 commanders, 327 lieutenants, passed midshipmen 233, midshipmen 171.

Ships of the line.—Pennsylvania, 120 guns; Franklin, 74; Columbus, 74; Ohio, 74; North Carolina, 74; Delaware, Alabama, Vermont, Virginia, New-York, New-Orleans, 74 guns each. Total 11.

Razee, Independence, 54 guns. Total 1.

Frigates.—United States, Constitution, Potomac, Brandywine, Columbia, Congress, Cumberland, Savannah, Raritan, Santee, Sabine, St. Lawrence, 44 guns each; Constellation and Macedonia, 36 guns each. Total, 14 vessels.

Ships of War.—Saratoga, John Adams, Vincennes, Warren, Falmouth, Fairfield, Vandalia, St. Louis, Cayenne, Levant, Portsmouth, Plymouth, St. Mary's, Jamestown, Germantown, Albany, 20 guns each; Ontario, Decatur, Preble, Marion, Dale, 16 guns each. Total, 21 vessels.

Brigs.—Dolphin, Porpoise, Bainbridge, Perry, 10 guns each. Total, 4 vessels.

Schooners.—Wave, 1 gun; Phœnix, 2; Petrel, 1. Total, 3 vessels.

Steam Frigates.—Mississippi, Susquehanna, Powhatan, Saranac, San Jacinto. Total, 5.

Steamers.—Fulton, Michigan, Alleghany, Union,

Vixen, Waterwitch, Massachusetts, General Taylor, Engineer, John Hancock. Total, 10.

Store Ships and Brigs.—Relief, Lexington, Supply, Fredonia. Total, 5 vessels.

U. STATES RELIGIOUS STATISTICS (ESTIMATED).—*Roman Catholics*, 1,073 churches, 1,233,350 communicants. *Episcopalians*, 1,232 churches, 67,550 members. *Presbyterians* (Old School), 2,675 churches, 140,060 members. *Lutheran*, 1,604 churches, 163,000 members. *Methodist Church North and South*, 1,000,000 communicants. *Congregationalists*, 1,971 churches, 197,196 members. *Baptists*, 8,872 churches, 719,290 members. *Campbellite Baptists*, 1,848 churches, 118,618 members. There are 95,000 other *Presbyterians*, 1,000,000 *Dutch and German Reformed*, 6000 *Moravians*, 3,000 *Reformed Methodists*, 20,000 *Wesleyan Methodists*, 15,000 *United Brethren*, 15,000 *Albright Methodists*, 58,000 *Mennonites*, 30,000 *Unitarians*, 60,000 *Universalists* 5006, *Swedenborgians*, 3,586 *Six Principle Baptists*, 6,243 *Seventh Day Baptists*, 56,000 *Free Will Baptists*, 10,000 *Church of God Baptists*, 3000 *Christian Baptists*, 64,000 *Anti-mission Baptists*.

UNITED STATES POPULATION AND REPRESENTATION.

The tables which are furnished on page 419 of this volume and 459 of vol. ii., were prepared before the returns were carefully revised and digested. A later table of population shows some differences, and as it is on the highest authority, we insert it.

The Secretary of the Interior, in compliance with the provisions of the act of Congress, approved 23d May, 1850, providing for the taking of the seventh and subsequent censuses, has transmitted to the House of Representatives his official certificate of the number of representatives apportioned to each state, under the last or seventh enumeration of the inhabitants, of the United States, and states that certificates are being prepared to be sent to the executive of each state of the number to which such state is entitled. These certificates are in accordance with, and founded upon the following table, showing the federal and representative population of the United States on the 1st day of June, 1850:

Population of the United States, Seventh Census, 1850, with the Apportionment of Representation and the Fractions for each state.

	Whites	Free colored	Total	Slaves	Federal representative population	Representatives of each state	
						No.	Fractions
Maine	581,813	1,356	583,169		533,163	6	22,649
New-Hampshire	317,456	529	317,976		317,976	3	37,716
Vermont	315,402	718	314,120		314,120	3	33,860
Massachusetts	985,704	8,795	994,499		994,499	11	*60,299
Rhode Island	143,875	3,669	147,544		147,544	2	*54,124
Connecticut	363,305	7,186	370,791		370,791	4	*90,531
New-York	3,019,457	47,037	3,097,394		3,097,394	33	14,534
Pennsylvania	2,258,163	52,323	2,311,786		2,311,786	25	*69,706
Ohio	1,956,408	21,360	1,980,408		1,980,408	21	18,588
Indiana	977,628	10,788	988,416		988,416	11	*54,216
Illinois	846,104	5,366	851,470		851,470	9	10,690
Michigan	395,097	2,557	397,654		397,654	4	23,974
Wisconsin	304,565	626	305,191		305,191	3	24,931
Iowa	191,879	335	192,214		192,214	2	5,374
California	91,632	965	92,597		92,597	†2	22,365
New-Jersey	465,523	23,807	489,330	225	489,465	5	..
Delaware	71,169	18,073	89,242	2,290	90,616	1	..
Maryland	417,913	74,723	492,666	90,368	546,886	6	*79,786
Virginia	895,344	53,829	949,138	472,528	1,232,649	13	18,189
North Carolina	553,118	27,373	580,491	288,410	753,538	8	6,178
South Carolina	274,623	8,900	283,523	381,984	514,513	6	47,413
Georgia	521,438	2,880	524,318	381,681	753,326	8	5,966
Alabama	426,486	2,293	428,779	342,892	634,514	7	*73,994
Mississippi	295,758	899	296,657	399,048	482,595	5	15,495
Louisiana	255,416	17,537	272,953	244,786	419,824	4	46,144
Tennessee	755,893	6,271	763,164	239,461	906,840	10	*66,060
Kentucky	761,688	9,736	771,424	210,981	898,102	10	*57,232
Missouri	592,077	2,514	594,621	87,422	647,074	7	*86,554
Arkansas	162,068	589	162,657	46,982	190,846	2	4,006
Florida	47,167	925	48,092	39,309	71,677	1	..
Texas	154,100	331	154,431	58,161	189,327	2	2,487
District of Columbia	38,027	9,973	48,000	3,687	..	..	..
Minnesota	6,038	39	6,077	..	..	..	..
New-Mexico	61,530	17	61,547	..	..	..	..
Oregon	13,087	206	13,292	..	..	..	..
Utah	11,330	24	11,354	..	..	..	..

Total Population in the Thirty-one States.

Whites.....	19,427,259	
Free colored.....	419,451	
	<hr/>	19,846,710
Slaves.....		3,200,380
Federal Representative Population.....		21,766,931
Federal Representative ratio.....		93,420

Total Population, including the Territories.

Whites.....	19,557,271	
Free colored.....	429,710	
Slaves.....		3,204,093
	<hr/>	23,191,074

Total.....23,191,074

All states marked thus (*) have an additional member for the fraction.

One representative added for California under the act of Congress, approved 30th July, 1852.

U. STATES CURRENCY, COINAGE, ETC.—The large increase which the specie currency has undergone the last four years, has, up to this time, been without any very perceptible influence upon values, or the rent of capital generally, and that it is so, may, without doubt, be ascribed to the fact that all other products of industry have increased in an equal or even greater ratio, and the channels of circulation which were before nearly bare of coin, particularly gold, have become, at least on the seaboard, far better stocked with gold. We may take official data in order to approximate the quantity of gold and silver coins actually now in the country, and the rate of its increase. Prior to the year 1821 there were no official records of the imports and exports of the precious metals; up to that year there had been coined in the United States, however, \$7,541,542 of gold, and \$10,900,490 of silver, which would make, together, \$18,442,032; but nearly all

the small circulating coin was then, as now, Spanish fractions, and owing to the false location of the mint, nearly all the gold imported, and which came to New-York, remained in the banks' vaults in the foreign shape. In those days the difficulty, risk and expense of sending gold from New-York to Philadelphia for coinage, was too great for any individual or bank to undertake. There had also been some specie, but not much in the country at the formation of the government. Under all these circumstances, viz: the actual coinage, the retention of foreign coins in the banks, the circulating Spanish coin, &c., Mr. Gallatin and Mr. Crawford both estimated the specie in the country at about \$30,000,000. Since that time the amount of specie has been more accurately ascertained. The import and export of foreign coins and bullion have been, since 1820, as follows:

Statement of the Import and Export of Gold and Silver Coin and Bullion annually, from October 1, 1820, being the period at which they were first recorded, to June 30, 1851.

Years	Gold Bullion		Gold Coin		Silver Bullion		Silver Coin	
	Import Dolls	Export Dolls	Import Dolls	Export Dolls	Import Dolls	Export Dolls	Import Dolls	Export Dolls
1821.....	..	..	..	..	84,890	90	7,980,009	10,477,969
1822.....	..	..	..	..	411,444	28,248	2,958,402	10,781,932
1823.....	..	..	..	..	230,771	1,800	4,867,125	6,371,187
1824.....	11,941	..	34,954	..	319,451	..	8,013,489	7,014,552
1825.....	151,020	..	378,257	315,672	368,827	10,849	5,252,661	8,470,534
1826.....	116,194	15,648	562,546	434,555	462,087	25,090	5,740,131	3,632,385
1827.....	91,049	8,610	1,019,399	820,304	422,605	3,236	6,618,077	6,139,155
1828.....	69,650	13,663	738,570	928,384	465,064	42,588	6,216,458	6,565,804
1829.....	110,638	25,270	706,028	935,102	837,107	213,821	5,749,839	3,136,941
1830.....	115,267	10,637	705,879	474,876	1,047,343	24,154	6,285,475	731,955
1831.....	166,191	21,690	765,838	899,365	686,283	203,572	5,687,633	5,831,830
1832.....	102,021	7,615	614,665	630,850	736,711	255,717	4,454,107	3,351,417
1833.....	48,276	26,773	563,585	495,890	297,849	..	6,160,676	1,722,196
1834.....	293,685	12,681	3,472,507	276,999	514,417	2,591	13,631,043	1,383,987
1835.....	655,457	..	1,669,739	625,679	765,283	..	10,040,968	5,122,495
1836.....	1,913,137	25,777	5,318,725	275,940	318,350	52,695	5,850,669	3,624,186
1837.....	536,549	101,563	1,895,265	1,828,653	594,291	5,600	7,490,309	2,756,914
1838.....	230,694	..	1,144,189	740,263	392,843	2,500	5,679,390	2,292,342
1839.....	86,540	77,660	1,065,652	2,814,650	154,680	8,040	4,267,391	3,968,035
1840.....	273,127	..	2,812,030	1,468,300	469,434	47,689	5,328,222	4,665,952
1841.....	134,181	166,086	1,098,346	676,757	274,225	63,011	3,401,730	6,271,452
Total to Sept. '41.....	5,105,588	513,673	34,866,174	14,642,239	9,835,945	991,291	131,673,803	104,304,220
1842.....	56,365	..	700,929	1,134,002	39,458	..	3,291,464	2,508,713
1843-9 mos.	100,835	450	16,965,602	299,808	142,199	..	5,111,699	1,113,104
1844.....	83,150	..	1,530,154	1,183,116	208,694	..	4,008,031	4,087,693
1845.....	66,103	..	752,747	2,210,979	41,275	..	3,210,117	5,551,070
1846.....	14,150	..	896,263	1,629,348	33,579	..	2,833,740	1,852,069
1847.....	151,749	..	2,142,182	2,975,105	71,923	..	2,474,485	869,103
1848.....	56,882	..	3,351,873	8,379,785	392,939	174,971	2,558,590	4,595,488
1849.....	297,570	6,500	3,771,077	1,008,859	154,688	..	2,427,905	3,432,415
1850.....	175,984	2,160	1,600,722	2,511,788	26,316	..	2,825,707	2,962,367
1851.....	196,466	1,528	3,372,644	4,758,805	48,471	4,534	1,835,942	6,631,305
Total to June 30.....	1,199,234	10,638	54,365,193	24,082,591	1,159,542	179,505	30,677,743	33,703,397

The aggregates sum up thus :

	Gold			Silver		
	Imports	Exports	Excess of Imports	Imports	Exports	Excess of Imports
Coin.....	\$89,231,367.....	\$38,704,830. . .	\$59,506,537.....	\$162,351,546.....	\$138,007,617.....	\$24,343,929
Bullion.....	6,304,822.....	524,311.....	5,780,511.....	11,015,478.....	1,170,796.....	9,846,691
Total..	\$95,536,189....	\$39,249,141....	\$56,287,048....	\$173,367,024....	\$139,178,413....	\$34,188,620

The supply of silver has been very small, and it will be observed from the imports and exports, that in the last ten years the export is actually \$3,000,000, say 10 per cent. more than the apparent imports. These are the facts according to the official figures, but really the stock of silver has undergone no diminution. The exports are nearly all foreign coins, which come here unreported in the pockets of immigrants, and return upon the manifests. Thus, in the months of July and August last, there were exported from New-York \$7,000,000, of five francs, German and English silver, nearly all of which came in the pockets of immigrants, unknown to official returns; much gold came also in the same private manner, and the re-exports of those pieces are equal to \$500,000, because they are the most desirable means of remittance; as there is no available mint in the United States, their national character is not changed. The Atlantic gold mines first began to furnish gold to the mint in 1824, and since the discovery of California they have somewhat de-

clined. The total supply of American gold deposited at all the mints up to July 31, 1852, was as follows :

SUPPLY OF UNITED STATES GOLD.

	California	Other Mints	Total
1824 to 1846.	\$10,713,211.		\$10,713,211
1846.....	1,139,357.....		1,139,357
1847.....	889,085.....		889,085
1848.....	45,301.....	851,374.....	896,675
1849.....	6,151,361.....	927,784.....	7,079,144
1850.....	36,273,097.....	665,217.....	36,938,314
1851.....	55,938,232.....	602,380.....	56,540,612
1852 7 months	31,298,823.....	481,930.....	31,779,853
	\$129,706,813.	\$16,219,438.	\$145,976,251

Thus we have the domestic production, and if we add this to the net import, the supply amounts to \$202,263,299 of gold since 1820. Now the actual United States coinage at the mint and branches, has been as follows :

UNITED STATES COINAGE.

	Gold	Silver	Total Coinage
Coinage to 1821.....	\$7,541,542.....	\$10,900,490.....	\$18,442,033
" 1821 to 1852.....	172,747,755.....	67,081,918.....	239,829,673
" Jan. 1, to Aug. 1, 1852.....	31,951,751.....	455,545.....	32,407,296
Total.....	\$212,241,048.....	\$78,437,953.....	\$290,679,002

The exports of United States coin from 1821 to June, 1851, reached \$39,874,357; and for the year ending July 1, 1852, they have been about \$35,000,000. The official returns do not distinguish between silver and gold in the export of the United States coin, but during the past year they have been nearly all gold. It results then as follows :

	Exported as Coin
United States coinage—	
1821 to 1851.....	\$176,341,149.....
1851.....	63,488,524.....
1852.....	32,407,296.....
Total.....	\$272,236,969.....

This gives an increase of near 200 millions dollars of United States coin since 1821. It will be observed that the gold coinage since 1821, is much larger than the domestic supply of the metal. It has been as follows :

Domestic supply of gold, 1821 to 1852....	\$145,976,251
Excess imports of gold.....	56,287,048
Total supply, 1821 to 1852.....	\$202,263,299
" coinage ".....	204,699,516

Thus, the coinage has been greater than the whole apparent supply, but it arises from re-coinage from jewelry and ornaments melted up at the mint, and from the emigrant supplies of gold which do not enter into the official returns. Now, notwithstanding this apparent coinage of all the importation, the quantity of foreign coins in the market is large, and always in good supply. In order to show the nature of the supply, we take a table of the exports of coin from New-York for the months of July and August for two years :

EXPORTS OF COIN FROM NEW-YORK, JULY AND AUGUST.

	1851.	1852.
United States gold coin.....	\$6,546,580.....	\$4,763,485
" silver coin.....	1,037,955.....	110,000
British silver coin.....	48,600.....	15,630
Mexican dollars.....	131,268.....	237,000
Other foreign silver.....	357,329.....	698,607
English gold.....	313,894.....	85,057
Doubloons, gold.....	127,004.....	33,156
Other foreign gold.....	80,481.....	23,000
Gold dust.....	15,627.....	6,000
Total.....	\$8,658,738.....	\$6,271,934

Thus, notwithstanding the apparent small supply of foreign money by the official returns of importation, the export returns show that the markets are well supplied. Under these circumstances, if the estimate by Mr. Crawford was correct at \$30,000,000 in 1820, and the United States coinage has increased \$200,000,000, with an apparent large supply of foreign coin still in the market, the stock of specie in the country is now not short of \$230,000,000 we allow, but little for the use of the precious metals in the arts, because a great quantity of that raw material is refabricated, and of late years, since the process of galvanizing has been introduced, the quantity of the metals used in ornaments is far less than formerly. The Hon. Daniel Webster estimated the amount of coin in the country, in 1835, in his speech upon the Sub-Treasury, at \$80,000,000; since then it has increased \$150,000,000, without taking into consideration the quantities of bullion which circulate as money in California; the actual money there is that which has passed through the United States mint. Now, notwithstanding this great supply of money, the uses for it have multiplied immensely; California alone has taken off a very considerable quantity, and the west and south and east are com-

paratively well supplied with coin, where but a few years since there was none.

Since 1840 over 8,000,000 souls have been added to the population of the United States, and according to the census the whole white population doubled between the years 1830 and 1850; that is to say, it rose from 10,537,378 at the former period to 19,619,366 in 1850. As in the last two years the increase has been more rapid, the probability is, that from 1832 to 1852 the number of whites have quite doubled; a fact, which in itself, if the relative wealth and trade per year remained the same, would have required a doubling of the specie—that is to say, an addition of \$80,000,000. But the productive wealth of the country, its industry and traffic, are very much more per head than they were in 1830. Thus, the exports of domestic produce from the country, were \$6 per head in 1830, and \$10 per head in 1851; the imports were \$7 per head at the former period, and are now \$11 per head. The property which came via the New-York canals to tide-water was under \$10,000,000 in 1830, and was \$55,000,000 in 1851. The production of coal and iron rose from nothing to \$20,000,000; about the same with sugar in Louisiana. The production of cotton has increased from 1,000,000 bales to over 3,000,000 bales, say from \$40,000,000 to \$120,000,000 in value. The rail-road and canal traffic has increased \$30,000,000 per annum, requiring a large currency. Manufactures and small trades have more than quadrupled. Under all these circumstances, if, at \$8 per head, money was far from abundant in 1830, its relative abundance would not now be increased at \$12 per head, which would give the amount now estimated in the country, viz: \$240,000,000. But the increase in population, the extension of rail-roads, and the development of natural wealth, are growing with a more rapid pace than ever, and a proportional increased demand for currency must attend those circumstances for a long time to come. The shower of coin which has sprinkled over the face of the country, in the last two years, has but partially refreshed the thirsty soil. There was a want of money which is far from being satisfied, and the distribution of the money over the country has been most iniquitously retarded by the want of a mint in New-York, and once more Congress has adjourned, having dodged the most important measure to the material interests of the whole people which could have occupied their attention.—*Kettell*.

UNITED STATES STEAM MARINE.

	No.	Tonnage.
Atlantic coast, east of Florida Cape	465	154,270
Gulf of Mexico, from Cape Florida to Rio Grande.....	109	23,241
Pacific Coast.....	51	34,966
Mississippi River, exclusive of the Ohio Basin.....	253	67,957
Ohio River and Basin.....	348	67,601
Basin of the Northern Lakes.....	164	69,168
Total.....	1,300	416,526

This was the aggregate Steam Marine of the United States on the 1st of July, 1851, subdivided in the following classes:

	No.	Tonnage.
Ocean Steamers.....	95	91,475
Ordinary steamers.....	1,145	275,000
Propellers.....	119	27,974
Ferryboats.....	130	22,744

The average tonnage of steamers of different classes is as follows:

Ocean Steamers.....	953 tons average.
Ordinary Steamers on the Coast..	235 do. do.
Ordinary Steamers on the Lakes.	503 do. do.
Ordinary Steamers on the Rivers	235 do. do.
Propellers on the Coast.....	180 do. do.
Propellers on the Lakes.....	302 do. do.

UNITED STATES EXPORTS AND IMPORTS FROM CUBA—1851.

Domestic exports		Domestic exports	
Oil, Sperm. galls.	17,087	Candles, tallow lb	715,674
" Whale.....	184,094	Soap.....	30,748
" Linseed.....	3,581	Tobacco manuf'd	191,211
Candls., sperm. lb.	56,925	Leather.....	16,864
Fish, dried...qtls.	37,509	Shoes.....pair	1,552
" pickled. bbls.	1,799	Cables..... cwt	737
" " kegs	85	Gunpowder...lb	63,714
Staves & heads. M	3,713	Salt.....bush	5,770
Shingles.....	616	Lead.....lb.	6,248
Boards..... M ft.	44,491	Nails.....	2,694,886
Naval stores bbls.	2,764	Castings.....	13,806
Beef.....	1,652	Other Iron...\$	518,603
Tallow.....lb.	546,767	Copper Goods..\$	15,287
Butter.....	412,902	Drugs.....	56,008
Cheese.....	256,162	Cotton goods..\$	\$25,741
Pork..... bbls.	3,364	Flax.....	30
Hams..... lb.	1,237,919	Apparel.....	1,432
Lard.....	7,836,153	Earthenware...\$	1,128
Horses.....	108	Combs & brushes \$	2,976
Flour..... bbls.	5,511	Morocco.....	6,987
Corn.....bush	229,105	Fire engines.....	4,284
Corn meal...bbls.	3,398	Printing types	1,744
Bread.....	1,369	Books and music	10,630
" " kegs.	3,678	Paper.....	31,119
Potatoes.....bush	66,058	Paints.....	11,830
Apples.....bbls.	6,964	Glass.....	21,123
Rice..... tcs.	27,618	Tin.....	2,731
Cotton.....lb.	113,572	Pewter.....	488
Tobacco... hhd.	18	Specie.....	20,535
Hops.....lb.	1,119	Trunks.....	3,720
Spirits.....galls.	1,472	Bricks.....	2,693
Beer.....	85,391	Coal..... tons	13,332
Turpentine.....	15,071	Ice.....\$	18,320
Furniture.....\$	58,783		
Coaches.....	17,717	Total value.....	\$5,239,276
Hats.....	873	In Amer. ves....	5,039,768
Saddlery.....	5,122		
Exports—Foreign goods		Imports	
Specie.....	\$1,013,529	Gold.....\$	317,768
Worsted goods..	10,982	Coffee.....lb	3,099,084
Silk goods.....	88,532	Copper ore...\$	8,740
Linens.....	7,406	Copper.....pigs	2,331
Apparel.....	2,780	Cotton goods..\$	5,029
Nails.....lb.	4,000	Silk.....	5,435
Brandy...galls.	2,123	Plyg. cards. pcks	15,588
Oil, linseed.....	3,311	Cabinet wood..	97,580
Cocoa.....lb.	98,343	Dye wood.....	11,505
Figs.....	33,374	Raw hides.....	5,379
Pepper.....	603,189	Cocoa.....lb.	32,898
Candles, tallow	1,600	Molasses...galls.	31,518,462
Stearine.....	10,200	Sugar, brn...lb	275,327
Cordage.....	29,326	" white.....	2,274,194
Salt.....bush.	71,721	Almonds.....	27,125
Fish, dried.cwt.	3,253	Indigo.....	13,144
Fish.....bbls.	490	Tobacco...leaf	3,396,796
Tot. val.	\$1,284,487	Cigars.....M.	162,904
In Am. ves.	1,279,244	Other tobac..lb.	22,460
		Tot. val.	\$17,046,837
		In Am. ves.	15,615,951

UNITED STATES — MANUFACTURES OF 1850.—

The following rough calculations have been published from the Census Office. The complete figures have not yet appeared:

The entire capital invested in the various manufactures in the United States on the 1st of June, 1850, not to include any establishments producing less than the annual value of \$500, amounted, in round numbers, to.....		\$530,000,000
Value of raw material.....		550,000,000
Amount paid for labor.....		240,000,000
Value of manufactured articles.....		1,020,300,000
Number of persons employed.....		1,050,000
The capital invested in the manufacture of cotton goods amounted to....		74,501,031
Value of raw material.....		34,835,056
Amount paid for labor.....		16,286,304
Value of manufactured articles.....		61,869,184
Number of hands employed.....		92,286

The capital invested in the manufacture of woolen goods amounted to.....	28,113,650
Value of raw material.....	25,755,988
Amount paid for labor.....	8,399,280
Value of product.....	43,207,555
Number of hands employed.....	39,252
The capital invested in the manufacture of pig iron amounted to.....	17,346,425
Value of raw material.....	7,005,289
Amount paid for labor.....	5,066,625
Value of product.....	12,748,777
Number of hands employed.....	20,448

In making these estimates, the assistant marshals did not include any return of works which had not produced metal within the year, or those which had not commenced operations. The same is applicable to all manufactures enumerated.

The capital invested in the manufacture of castings amounted to.....	\$17,416,361
Value of raw material.....	10,346,355
Amount paid for labor.....	7,078,920
Value of product.....	25,108,155
Number of hands employed.....	23,589
The capital invested in the manufacture of wrought iron amounted to.....	13,995,220
Value of raw material.....	9,518,109
Amount paid for labor.....	4,196,628
Value of product.....	16,387,074
Number of hands employed.....	12,057

UNITED STATES MAIL STEAMERS.—“From the Report of Senator Rusk, of Texas.”

The United States mail steamship lines in operation on the 1st of March, 1852; the names of the several steamers, where employed, their tonnage respectively, and the date of their being first placed in service.

Name.	Register tonnage.	Date of commencement.
Tons. 95ths.		
*Washington.....	1,641 00	June, 1847.
*Hermann.....	1,734 00	March, 1848.
†Franklin.....	2,184 00	October, 1850.
†Humboldt.....	2,181 00	May, 1851.
‡Atlantic.....	3,845 66	April, 1850.
‡Pacific.....	2,707 10	May, 1850.
‡Arctic.....	2,856 75	October, 1850.
‡Baltic.....	2,723 08	November, 1850.
‡Falcon.....	691 18	December, 1848.
‡Ohio.....	2,432 23	September, 1849.
‡Georgia.....	2,727 42	January, 1850.
‡Crescent City.....	1,291 00	April, 1851.
‡El Dorado.....	1,049 88	April, 1851.
‡Empire City.....	1,751 21	May, 1851.
‡Cherokee.....	1,244 89	May, 1851.
‡Illinois.....	2,123 65	August, 1851.
‡Philadelphia.....	1,238 10	October, 1851.
‡California.....	1,058 00	October, 1848.
‡Oregon.....	1,099 00	October, 1848.
‡Panama.....	1,087 00	November, 1848.
‡Tennessee.....	1,275 00	—, 1849.
‡Golden Gate.....	2,068 00	—, 1851.
‡Columbia.....	778 00	—, 1850.
*Isabel.....	1,115 00	October, 1848.

* Between New-York and Bremen, via Southampton.

† Between New-York and Havre, via Southampton or Cowes.

‡ Between New-York and Liverpool.

‡ Between New-York, Havana, New-Orleans and Chagres; New-York and Chagres, direct; New-York and Chagres, touching at Kingston; and between New-Orleans and Chagres direct.

‡ Between Panama and Astoria, via San Diego, Monterey, San Francisco and Umpqua city.

** Between Charleston and Havana, via Savannah and Key West.

The steamers of the Collins' line are some six feet deeper than the custom-house rule for calculating tonnage embraced in the calculation, which makes their actual tonnage about twenty-five per cent. more than their registered tonnage, demanded in the table.—*Mr. Collins' Report.*

The Pacific Mail Steamship Company has, besides, in the Pacific, seven steamers of different tonnage, but aggregating near five thousand tons. They transport the mail only when exigencies make its transportation by them necessary or expedient.—*Mr. Aspinwall's Report.*

UNITED STATES.—EXPORTS, 1851.

Summary Statement of the value of the Exports of the growth, produce, and manufacture of the United States, during the year commencing on the 1st day of July, 1850, and ending on the 30th of June, 1851:

THE SEA.

Fisheries—	
Whale and other fish oil.....	\$882,485
Spermaceti oil.....	1,044,967
Whalebone.....	689,662
Spermaceti candles.....	195,916
Dried Fish or cod fisheries.....	367,729
Pickled fish, or river fisheries, (her- ring, shad, salmon, mackerel.....)	113,932

THE FOREST.

Product of wood—	
Staves, shingles, boards, scantling, hewn timber..	\$2,348,621
Other lumber.....	205,190
Masts and spars.....	70,095
Oak bark and other dye....	355,477
All manufactures of wood..	2,076,395
Naval stores, tar, pitch, rosin, turpentine.....	1,063,842
Ashes, pot and pearl.....	649,091
	6,768,711
Ginseng.....	100,549
Skins and furs.....	977,702

AGRICULTURE.

Product of animals—	
Beef, tallow, hides, horned cattle.....	\$1,689,938
Butter and cheese.....	1,124,652
Pork, (pickled,) bacon, lard, live hogs.....	4,366,015
Horses and mules.....	198,155
Sheep.....	18,875
	7,399,655
Vegetable food—	
Wheat.....	1,025,732
Flour.....	10,524,331
Indian corn.....	1,762,549
Indian meal.....	622,866
Eye meal.....	145,802
Rye, oats, and other small grain and pulse.....	120,670
Biscuit or ship bread....	354,286
Potatoes.....	79,314
Apples.....	71,367
Rice.....	2,170,927
	16,877,844
Indigo.....	2,803
Cotton.....	112,315,317
Tobacco.....	9,219,251
Hemp.....	29,114
All other agricultural products—	
Flaxseed.....	18,988
Brown sugar.....	29,170
Hops.....	11,636
	59,794

MANUFACTURES.

	145,903,778
Wax.....	122,835
Refined sugar.....	219,588
Chocolate.....	3,255

Spirits from grain.....	36,084	Earthen and stoneware.....	23,096
Spirits from molasses.....	239,632	Combs and buttons.....	27,334
Molasses.....	16,830	Brushes.....	8,257
Vinegar.....	16,915	Billiard tables and apparatus.....	1,798
Beer, ale, porter, cider.....	57,975	Umbrellas, parasols, sunshades.....	22,260
Linseed oil and spirits of turpentine....	145,410	Leather and morocco skins (not sold per pound).....	13,309
Household furniture.....	362,830	Fire engines and apparatus.....	9,468
Coaches and other carriages.....	199,421	Printing presses and type.....	71,401
Hats.....	108,768	Musical instruments.....	55,700
Saddlery.....	30,100	Books and maps.....	153,912
Tallow candles and soap.....	609,732	Paper and stationery.....	155,664
Snuff and tobacco.....	1,143,547	Paints and varnish.....	109,634
Leather, boots and shoes.....	458,838	Manufactures of glass.....	185,366
Cordage.....	52,054	Tin.....	27,823
Gunpowder.....	154,257	Pewter and lead.....	16,426
Salt.....	61,424	Marble and stone.....	41,449
Lead.....	11,774	Gold and silver and gold leaf.....	68,639
Iron—pig, bar, and nails.....	217,652	Gold and silver coin.....	18,069,580
Castings.....	164,425	Artificial flowers and jewelry.....	121,013
All manufactures of.....	1,875,621	Trunks.....	12,207
Copper and brass.....	91,871	Brick and lime.....	22,945
Medicinal drugs.....	351,585		
Cotton piece goods—			
Printed or colored.....	\$1,006,561		\$34,413,206
Uncolored.....	5,571,576	Coal.....	163,977
Twist, yarn, and thread....	37,260	Ice.....	106,805
Other manufactures of.....	625,808	Articles not enumerated—	
	7,241,205	Manufactured.....	3,793,341
Hemp and flax—		Raw produce.....	1,166,898
Cloth and thread.....	1,647		4,960,239
Bags and all manufactures of.....	6,376	Total.....	\$196,689,718
Wearing apparel.....	1,211,894		

UNITED STATES.—TONNAGE OF, 1850-51.

Comparative view of the registered and enrolled tonnage of the United States; showing the tonnage employed in the whale fishery; also, the proportion of the enrolled and licensed tonnage employed in the coasting trade, cod fishery, mackerel fishery, and whale fishery, from 1815 to 1851, inclusive.

YEARS.	Total tonnage	Registered tonnage in whale fishery	Proportion of the enrolled and licensed tonnage employed in the—			
			Coasting trade	Cod fishery	Mackerel fishery	Whale fishery
			Tons and 95ths			
1815	1,368,127 78	—	435,066 87	26,570 33	—	1,229 92
1816	1,372,218 53	—	479,979 14	37,879 30	—	1,168 00
1817	1,399,912 41	4,871 41	481,457 92	53,990 26	—	349 92
1818	1,225,184 20	16,134 77	503,140 37	58,551 72	—	614 63
1819	1,260,751 61	31,700 40	523,556 20	65,044 92	—	686 35
1820	1,280,166 24	35,391 44	539,080 46	60,842 55	—	1,053 66
1821	1,298,958 70	26,070 83	569,434 57	51,351 49	—	1,924 40
1822	1,324,699 17	45,449 42	573,080 02	58,405 35	—	3,133 50
1823	1,336,565 68	39,918 13	566,408 88	67,621 14	—	585 37
1824	1,399,163 02	33,165 70	589,223 01	68,419 00	—	180 08
1825	1,423,110 77	25,379 24	587,273 07	70,626 02	—	—
1826	1,534,189 83	41,757 32	666,420 44	63,761 42	—	226 83
1827	1,620,607 78	45,653 21	732,937 65	74,048 81	—	338 94
1828	1,741,391 87	54,621 08	758,922 12	74,947 74	—	180 34
1829	1,260,797 81	57,284 38	508,858 10	101,796 78	—	—
1830	1,191,776 42	38,911 82	516,978 18	61,554 57	35,973 38	792 87
1831	1,267,846 29	82,315 79	539,723 74	60,977 81	46,210 80	441 82
1832	1,429,450 21	72,888 84	649,627 40	54,027 70	47,427 72	377 47
1833	1,606,149 94	101,158 17	744,198 60	62,700 70	48,725 43	478 39
1834	1,758,907 14	108,060 14	783,618 65	56,403 70	61,082 11	364 16
1835	1,824,940 14	97,640 00	792,301 20	72,374 18	64,443 11	—
1836	1,820,102 65	144,650 50	873,023 21	63,367 37	64,425 25	1,573 26
1837	1,896,655 69	127,241 81	956,980 60	80,551 89	46,810 90	1,894 86
1838	1,995,639 80	119,629 89	1,041,105 18	70,064 00	56,649 16	5,229 55
1839	2,096,478 81	131,845 25	1,153,551 80	72,258 68	35,983 87	439 69
1840	2,180,764 16	136,926 64	1,176,694 46	76,035 65	28,869 19	—
1841	2,137,744 37	157,405 17	1,107,067 88	66,551 84	11,321 13	—
1842	2,092,390 69	151,612 74	1,045,753 39	54,804 02	16,096 83	377 31
1843	2,158,601 93	152,374 86	1,076,155 59	61,224 25	11,775 70	143 33
1844	2,280,095 07	168,293 63	1,109,614 44	85,224 77	16,170 66	321 14
1845	2,417,002 06	190,695 65	1,190,898 27	69,225 66	21,413 16	206 92
1846	2,562,084 81	186,920 16	1,289,870 89	72,516 17	36,463 16	439 58
1847	2,639,045 77	193,858 72	1,452,623 35	70,177 52	31,451 13	—
1848	3,154,941 85	192,179 90	1,620,988 16	82,651 82	43,558 78	432 75
1849	3,334,015 29	180,186 29	1,730,410 84	42,970 19	73,853 78	—
1850	3,535,454 23	146,016 71	1,755,796 42	85,646 30	58,111 94	—
1851	3,772,439 43	181,644 52	1,854,317 90	87,475 89	50,539 02	—

UNITED STATES COMMERCIAL STATISTICS.—From the latest accounts prepared at the Treasury of the United States, and published by order of Congress, we collect and arrange the following:

The number of American vessels which cleared for foreign countries during the year ending June 30, 1851, was 9,274, of 3,200,519 tonnage, with a crew of 113,640 men, and 3,427 boys. The number of foreign vessels 10,712, 1,929,535 tons, 89,659 men, and 1,920 boys. Total clearances, American and foreign, 19,986 vessels, 5,130,054 tons, 303,299 men, and 5,356 boys.

The number of American vessels which entered in the same time was 8,951, 3,054,349 tons, 113,471 men, 3,116 boys. Number of foreign vessels 10,759, 1,939,091 tons, 90,796 men, 1,831 boys. Total American and foreign entered, 19,710 vessels, 4,993,440 tons, 204,267 men, 4,937 boys.

STATEMENT OF FOREIGN IMPORTS INTO UNITED STATES, YEAR ENDING 1ST JULY, 1851.

WHENCE IMPORTED.	MERCHANDISE PAYING DUTIES AD VALOREM.					
	Free of duty	Paying duties	Total	In American vessels	In foreign vessels	From dominions of each power.
Russia.....	\$36,344	\$1,356,438	\$1,392,782	\$1,007,981	\$384,801	\$1,392,782
Prussia.....	—	20,542	20,542	15,392	5,150	20,542
Sweden and Norway.....	581	966,656	967,237	161,069	806,168	966,238
Swedish West Indies.....	19,587	9,414	29,001	28,654	347	274,781
Danish West Indies.....	16,096	219,798	235,894	203,055	32,839	32,887
Denmark.....	—	38,887	38,887	—	38,887	10,063,364
Hanse Towns.....	297,949	9,710,415	10,008,364	5,098,915	4,909,449	—
Holland.....	383,917	1,668,789	2,052,706	771,761	1,280,945	—
Dutch East Indies.....	208,356	201,792	410,148	410,148	—	3,124,997
Dutch West Indies.....	38,970	533,500	572,470	539,501	32,969	—
Dutch Guiana.....	—	89,673	89,673	89,673	—	2,377,630
Belgium.....	5,840	2,371,790	2,377,630	1,840,031	537,599	—
England.....	2,283,452	88,328,786	90,612,238	65,984,122	24,628,116	—
Scotland.....	3,097	2,996,613	2,999,710	1,745,368	1,254,342	105,323,079
Ireland.....	1,104	234,834	235,938	26,589	209,349	—
Gibraltar.....	465	73,139	73,604	13,292	60,312	—
Malta.....	248	25,919	26,167	12,805	13,362	—
British East Indies.....	54,677	3,281,658	3,336,335	3,309,967	26,368	—
Cape of Good Hope.....	1,300	121,923	123,223	121,669	1,560	—
British Honduras.....	18,258	156,268	174,526	143,751	30,775	—
British Guiana.....	25,904	18,309	44,213	40,517	3,696	—
British West Indies.....	302,280	701,591	1,003,871	533,043	470,828	—
British American Colonies.....	160,367	1,576,284	1,736,651	210,270	1,526,381	—
Other British Colonies.....	—	132	132	132	—	—
Canada.....	1,529,685	3,426,786	4,956,471	2,360,174	2,596,297	—
France on the Atlantic.....	397,164	29,391,960	29,789,124	28,153,261	1,635,863	—
France on the Mediterranean.....	3,538	1,922,891	1,926,429	775,308	1,151,121	31,767,410
French Guiana.....	11,000	17,948	28,948	28,948	—	—
French West Indies.....	18,914	8,995	22,909	14,146	8,763	—
Spain on the Atlantic.....	4,807	446,990	451,797	229,269	222,528	—
Spain on the Mediterranean.....	10,383	1,700,393	1,710,776	1,071,076	639,700	—
Teneriffe and other Canaries.....	—	27,718	27,718	11,301	16,417	22,972,239
Manilla and other Philippine Islands.....	20,582	1,234,106	1,254,688	1,181,215	73,463	—
Cuba.....	661,172	16,385,759	17,046,931	15,615,957	1,430,974	—
Other Spanish West Indies.....	175,087	2,305,242	2,480,329	2,220,132	260,197	—
Portugal.....	150	367,398	367,548	26,480	341,068	—
Madeira.....	29	102,419	102,448	88,446	13,602	—
Fayal and other Azores.....	22,793	10,059	32,852	32,122	730	504,698
Cape de Verdes.....	681	1,169	1,850	1,850	—	—
Italy.....	23,032	2,028,865	2,051,897	1,148,298	908,599	2,051,897
Sicily.....	3,866	822,058	825,924	423,907	402,017	825,924
Sardinia.....	250	2,552	2,802	1,201	2,681	2,802
Trieste and other Austrian ports.....	9,662	720,926	730,788	47,210	683,578	730,788
Turkey.....	10,195	891,041	901,236	718,392	182,844	901,236
Hayti.....	1,315,689	574,279	1,889,968	1,664,591	225,377	1,889,968
Mexico.....	1,111,659	693,120	1,804,779	1,446,095	358,684	1,804,779
Central Republic of America.....	26,521	123,335	149,856	137,444	12,432	149,856
New Grenada.....	518,523	177,083	695,606	667,284	28,322	695,606
Venezuela.....	1,481,946	898,349	2,380,295	2,037,576	342,719	2,380,295
Brazil.....	8,889,131	2,636,173	11,525,304	8,891,582	2,633,722	11,525,304
Cisplatine Republic.....	1,560	17,554	19,114	—	19,114	—
Argentine Republic.....	101	3,265,281	3,265,382	1,915,289	1,350,093	3,265,382
Chili.....	76,821	2,657,925	2,734,746	2,734,746	—	2,734,746
Peru.....	48,085	46,648	94,733	63,674	31,159	94,733
Equador.....	806	75,886	76,692	76,692	—	76,692
South America generally.....	39,700	129	39,829	10,200	29,629	39,829
China.....	4,638,170	2,426,974	7,065,144	6,413,206	651,938	7,065,144
Africa generally.....	184,284	978,792	1,163,176	1,091,661	71,515	1,163,176
West Indies generally.....	—	25,751	25,751	25,751	—	25,751
South Seas and Pacific Ocean.....	1,172	1,126	2,298	2,298	—	2,298
Sandwich Islands.....	10,337	6,515	16,852	16,852	—	16,852
Total.....	25,106,587	191,118,345	216,224,932	163,650,543	52,574,389	216,224,932

Statistical view of the Commerce of the United States, exhibiting the value of Exports to and Imports from each foreign country, and the tonnage of American and foreign vessels arriving from and departing, during the year ending June 30, 1851.

COUNTRIES.	COMMERCE.			NAVIGATION.			
	Value of Exports.		Value of imports	American Tonnage.		Foreign Tonnage.	
	Foreign produce	Total domestic and foreign		Entered the United States	Cleared from the United States	Entered the United States	Cleared from the United States
Russia.....	\$145,987	\$1,611,691	\$1,392,782	9,817	9,241	3,266	3,239
Prussia.....	5,444	85,913	20,512	262	184	704	1,635
Sweden and Norway.....	21,566	782,346	967,237	2,669	1,544	25,225	9,098
Swedish West Indies.....	785	61,902	29,001	278	1,314	—	—
Denmark.....	19,540	111,797	38,887	—	199	544	2,086
Danish West Indies.....	125,602	1,028,289	235,894	10,386	18,233	5,052	4,175
Hanse Towns.....	641,491	6,047,447	10,008,364	21,734	16,696	90,539	69,724
Holland.....	284,054	2,193,169	2,052,705	11,417	9,239	18,262	26,014
Dutch East Indies.....	43,140	247,570	410,148	3,329	3,016	150	5,651
Dutch West Indies.....	138,069	504,987	572,470	15,923	7,687	7,663	806
Dutch Guiana.....	5,582	91,073	89,673	4,222	4,927	763	524
Belgium.....	142,619	2,852,012	2,377,630	16,578	17,654	7,524	3,829
England.....	8,151,266	113,273,187	90,612,238	619,592	611,561	411,611	274,283
Scotland.....	261,937	4,072,940	2,999,710	18,219	18,508	46,215	22,987
Ireland.....	1,200	599,888	235,938	5,488	3,142	74,021	12,618
Gibraltar.....	52,529	219,483	73,004	509	5,900	1,114	1,962
Malta.....	12,288	76,299	26,167	300	1,097	694	746
British East Indies.....	175,484	688,390	3,326,335	29,976	49,216	2,813	2,964
Cape of Good Hope.....	—	161,891	123,223	1,223	2,501	238	827
Mauritius.....	2,976	19,858	—	—	—	—	—
British Honduras.....	23,362	237,168	174,526	3,055	3,933	2,524	5,123
British Guiana.....	3,734	544,288	44,213	2,781	12,001	1,567	4,290
British West Indies.....	159,949	4,103,509	1,003,871	58,533	88,534	43,315	42,437
Canada.....	2,093,306	7,929,140	4,956,471	1,013,275	927,013	514,383	516,883
British American Colonies.....	861,230	4,085,783	1,736,651	62,458	108,235	362,218	592,507
Other British Colonies.....	—	—	132	—	—	—	—
France on the Atlantic.....	2,814,668	27,381,735	29,789,124	135,696	147,093	26,498	12,533
France on the Mediterranean.....	135,393	870,411	1,926,429	7,146	16,614	14,656	10,027
French West Indies.....	20,702	310,281	22,909	3,983	10,888	2,853	871
Miquelon and French fisher.....	—	3,715	—	—	672	—	2,072
French Guiana.....	651	46,344	28,948	681	1,006	—	—
Bourbon.....	2,875	22,728	—	—	—	—	—
French possessions in Africa.....	—	—	—	—	—	—	194
Spain on the Atlantic.....	1,075	959,788	451,797	9,940	14,688	5,547	12,424
Spain on the Mediterranean.....	137,472	4,594,803	1,710,776	15,101	9,576	19,590	44,014
Teneriffe and other Canaries.....	5,639	19,179	27,718	309	753	746	157
Manilla & Philippine Islands.....	7,000	132,544	1,254,688	9,933	15,134	2,549	4,805
Cuba.....	1,284,847	6,524,123	17,046,931	355,515	361,732	53,162	29,942
Porto Rico & othr Span. W. I.....	57,209	1,018,619	2,480,320	48,336	36,320	7,874	6,013
Portugal.....	4,906	172,338	367,548	961	2,470	5,175	5,176
Madaira.....	7,176	101,765	102,448	1,068	3,379	137	1,314
Fayal and other Azores.....	1,045	21,285	32,852	1,864	1,532	678	723
Cape de Verd Islands.....	2,437	59,913	1,850	111	1,505	—	730
Italy generally.....	127,406	1,864,240	2,051,897	—	—	—	—
Tuscany.....	—	—	—	5,210	1,513	4,710	485
Sicily.....	8,193	49,936	825,924	27,178	2,848	16,473	1,916
Sardinia.....	19,401	330,289	2,802	168	6,741	6,204	8,479
Pontifical States.....	—	—	—	—	—	310	—
Trieste & othr Austrian ports.....	230,894	2,496,467	730,788	814	10,179	6,281	13,371
Turkey, Levant, &c.....	65,529	227,733	901,236	6,704	4,268	2,109	—
Greece.....	—	—	—	207	—	—	—
Hayti.....	167,918	1,847,290	1,889,968	39,940	33,153	7,820	7,586
Mexico.....	567,098	1,581,783	1,804,779	29,407	31,019	12,701	20,145
Central America.....	39,089	262,391	149,856	8,550	27,565	209	4,406
New Grenada.....	533,121	3,040,822	695,606	166,375	205,390	9,960	12,585
Venezuela.....	189,746	1,044,525	2,380,295	17,103	11,761	2,738	2,291
Bolivia.....	—	—	—	383	189	254	129
Brazil.....	623,960	3,752,916	11,525,304	63,663	63,629	22,428	7,648
Argentine Republic.....	414,916	1,074,768	3,265,382	13,382	11,661	11,005	5,185
Cisplatine Republic.....	13,078	45,789	16,114	154	1,320	1,992	947
Chili.....	286,428	1,805,303	2,734,746	30,068	48,140	23,396	41,657
Peru.....	22,338	272,098	94,733	20,102	18,920	5,751	13,519
China.....	329,342	2,485,287	7,065,144	27,587	46,317	11,327	10,198
West Indies generally.....	—	76,936	25,751	—	—	—	—
Equador.....	—	—	76,692	586	219	410	568
South America generally.....	40,715	76,911	39,899	245	1,768	1,185	—
Liberia.....	—	—	—	—	257	—	—
Africa generally.....	65,283	1,340,644	1,163,176	12,675	12,978	1,035	595
Asia generally.....	1,375	71,961	—	—	—	—	—
South Seas & Pacific Ocean.....	95,832	666,978	2,298	48,501	54,678	1,040	4,013
Sandwich Islands.....	381	381	16,852	18,992	36,390	3,215	12,008
Australia.....	—	—	—	6,381	7,832	27,168	25,228
Northwest Coast.....	—	—	—	137	1,060	—	—
Greenland.....	—	—	—	—	376	—	—
Atlantic Ocean.....	—	—	—	3,077	6,960	—	—
Ionian Islands.....	—	—	—	846	—	—	—
Indian Ocean.....	—	—	—	3,393	4,540	—	—
Uncertain places.....	—	—	—	162	—	—	46
Total.....	21,698,293	218,388,011	216,224,932	3,054,349	3,200,519	1,939,091	1,929,535

UNITED STATES.—NATIONAL CHARACTER OF
FOREIGN VESSELS ENTERED OR SAILED FROM U. S.
YEAR ENDING JULY, 1851.

RECAPITULATION.

ENTERED AND SAILED.	Entered		Cleared	
	No	Tons	No	Tons
Russian.....	42	17,579	30	12,667
Prussian.....	47	15,622	61	18,313
Swedish.....	199	62,686	207	65,689
Danish.....	43	8,662	41	8,427
Hanseatic.....	286	109,108	298	110,570
Dutch.....	69	21,708	66	19,965
Belgian.....	24	7,754	18	5,561
Mecklenburg.....	12	3,765	10	2,934
Oldenburg.....	12	2,898	10	2,011
Hanoverian.....	7	1,312	5	1,596
British.....	9,489	1,559,869	9,423	1,552,170
French.....	95	25,252	100	26,608
Spanish.....	176	44,592	168	41,266
Portuguese.....	18	3,328	23	4,424
Austrian.....	15	6,723	20	8,125
Sardinian.....	57	14,746	54	15,075
Sicilian.....	21	5,391	29	7,307
Mexican.....	36	4,042	38	4,053
Venezuelan.....	9	1,445	10	1,862
Brazilian.....	9	2,681	8	2,212
New-Grenadian.....	9	2,067	7	1,574
Argentine.....	7	1,427	5	884
Cisplatine.....	3	646	—	—
Chilian.....	26	6,044	27	5,811
Hawaiian.....	16	2,092	14	1,728
Peruvian.....	17	4,163	23	5,578
Tahitian.....	—	—	2	129
Equadorian.....	5	1,533	4	704
Cent. American.....	1	66	4	539
Lubeck.....	5	1,445	3	838
Italian.....	3	486	5	916
Pontifical.....	1	310	—	—
Total.....	10,759	1,939,091	10,712	1,929,535

UNITED STATES.—NUMBER OF VESSELS BUILT IN,
YEAR ENDING JULY, 1851.

STATES	Ships	Brigs	Schooners	Steam and other Tugs	Steamers	Total number of vessels built	Total tonnage - Tons and pounds
Maine.....	102	45	94	9	4	254	77,398 49
N. H.....	7	—	—	—	—	7	8,158 06
Vermont.....	—	—	4	—	—	4	561 29
Mass.....	50	4	78	1	—	133	41,323 93
R. Island.....	3	1	4	3	1	12	3,056 60
Conn.....	1	—	22	7	5	35	3,414 20
N. York.....	25	2	60	88	54	229	76,805 02
N. Jersey.....	1	—	47	20	2	70	5,869 40
Penn.....	4	3	14	103	76	200	28,618 12
Delaware.....	1	—	7	4	3	15	2,058 47
Maryland.....	15	10	101	—	4	130	18,027 04
D. of Col.....	—	—	1	71	2	74	4,439 17
Virginia.....	—	—	16	7	4	27	1,778 31
N. Carolina.....	—	—	32	1	—	33	1,724 82
S. Carolina.....	—	—	4	—	1	5	625 12
Georgia.....	2	—	1	—	3	6	2,369 15
Florida.....	—	—	4	—	—	4	275 53
Alabama.....	—	—	2	3	—	5	3,462 62
Mississippi.....	—	—	—	—	—	—	—
Louisiana.....	—	—	15	1	8	24	2,327 05
Tennessee.....	—	—	—	—	1	1	225 10
Kentucky.....	—	—	—	—	38	38	8,661 49
Illinois.....	—	—	4	—	—	4	313 56
Missouri.....	—	—	—	5	6	11	2,066 04
Ohio.....	—	—	6	—	15	25	6,035 11
Michigan.....	—	—	5	3	1	9	1,365 92
Wisconsin.....	—	—	1	—	—	1	76 39
California.....	—	—	—	—	1	1	69 69
Total.....	211	65	522	326	233	1,357	298,203 60

UNITED STATES MILITIA.

Statistics of the Militia Force of the United States
compiled from the latest returns, together with the
number of permanent or fixed Military Posts or
Forts, and the number of Arsenals in each state.
1852.

States and Territories	Total No. of Commissioned Officers		Non-Commissioned Officers, Musicians and Privates		Aggre- gate
Maine.....	183	—	62,850	—	62,588
New-Hampshire.....	1,348	—	30,803	—	32,151
Massachusetts.....	549	—	119,141	—	119,690
Vermont.....	1,088	—	22,827	—	23,915
Rhode Island.....	78	—	14,265	—	14,443
Connecticut.....	456	—	51,193	—	51,649
New-York.....	7,762	—	257,631	—	265,293
New-Jersey.....	1,988	—	37,183	—	39,171
Pennsylvania.....	7,518	—	268,552	—	276,070
Delaware.....	447	—	8,782	—	9,229
Maryland.....	2,397	—	44,467	—	46,864
Virginia.....	6,494	—	118,634	—	125,128
North Carolina.....	4,267	—	75,181	—	79,448
South Carolina.....	2,591	—	52,618	—	55,209
Georgia.....	3,092	—	54,229	—	57,312
Florida.....	620	—	11,502	—	12,122
Alabama.....	2,832	—	73,830	—	76,662
Louisiana.....	1,392	—	42,431	—	43,823
Mississippi.....	825	—	35,259	—	36,084
Tennessee.....	3,607	—	67,465	—	71,252
Kentucky.....	4,805	—	77,035	—	81,840
Ohio.....	2,051	—	174,404	—	176,455
Michigan.....	2,795	—	61,145	—	63,938
Indiana.....	2,861	—	51,052	—	53,918
Illinois.....	4,618	—	165,741	—	170,359
Wisconsin.....	1,804	—	30,399	—	32,203
Iowa.....	—	—	—	—	—
Missouri.....	3,919	—	57,081	—	61,000
Arkansas.....	1,109	—	16,028	—	17,137
Texas.....	1,248	—	18,518	—	19,766
California.....	—	—	—	—	—
Minnesota.....	7	—	1,996	—	2,003
Oregon.....	—	—	—	—	—
Utah.....	217	—	2,358	—	2,575
New-Mexico.....	—	—	—	—	—
Dist. of Columbia.....	96	—	1,158	—	1,248
Total.....	74,962	—	2,105,524	—	2,180,486

UNITED STATES.—TONNAGE ON 30TH JUNE, 1851.

	Tons and pounds
The registered vessels em- ployed in the foreign trade on the 30th June, 1851.....	1,726,307 28
The enrolled vessels em- ployed in the coasting trade on the 30th June, 1851.....	1,854,317 90
The licensed vessels em- ployed in the coasting trade, under twenty tons, on the 30th June, 1851.....	45,653 36
	1,899,976 31
The enrolled vessels em- ployed in the cod fishery on the 30th June, 1851.....	87,475 89
The enrolled vessels em- ployed in the mackerel fishery on the 30th June, 1851.....	50,539 02
The enrolled vessels em- ployed in the whale fishery, on the 30th June 1851.....	—

The licensed vessels, under twenty tons, employed in the cod fishery on the 30th June, 1851.....	8,140 88	146,155 84
Total.....	—	3,772,439 43

The registered tonnage employed in the whale fishery on the 30th June, 1851.....	181,644 52	
----------------------------------------------------------------------------------	------------	--

The registered tonnage employed other than in the whale fishery on the 30th June, 1851.....	1,544,662 66	1,726,307 23
---------------------------------------------------------------------------------------------	--------------	--------------

The aggregate amount of the tonnage of the U. S. on the 30th June, 1851.....	—	3,772,439 43
------------------------------------------------------------------------------	---	--------------

Whereof—		
Permanent registered tonnage.....	1,351,193 14	
Temporary registered tonnage.....	375,114 09	
Total registered tonnage.....	—	1,726,307 23

Permanent enrolled and licensed tonnage.....	1,979,540 68	
Temporary enrolled and licensed tonnage.....	12,792 18	
Total enrolled and licensed tonnage.....	—	1,992,332 86

Licensed tonnage, under twenty tons, employed in the coasting trade.....	45,658 36	
Licensed tonnage, under twenty tons, employed in the cod fishery....	8,140 88	
Total licensed tonnage, under twenty tons....	—	53,799 29
Total.....	—	3,772,439 43

Of the enrolled and licensed tonnage, there were employed in the		
Coasting trade.....	1,854,317 90	
Cod fishery.....	87,475 89	
Mackerel fishery.....	50,539 02	
Whale fishery.....	—	1,992,332 86

Of the registered tonnage, amounting, as stated above, to 1,726,307 23 tons, there were employed in steam navigation.....	62,390 13	
---------------------------------------------------------------------------------------------------------------------------	-----------	--

Of the enrolled licensed tonnage, amounting, as stated above, to 1,992,332 86 tons, there were employed in steam navigation.....	521,216 87	
Total tonnage in steam navigation.....	—	583,607 05

UNITED STATES.—STATEMENT EXHIBITING A CONDENSED VIEW OF THE TONNAGE OF THE SEVERAL DISTRICTS OF THE UNITED STATES ON THE 30TH JUNE, 1851.

District	Total tonnage of each district	District	Total tonnage of each district	District	Total tonnage of each district
Passamaquoddy.. Me.	25,349 38	Buffalo Creek.... N. Y.	43,603 13	Beaufort..... N. C.	2,414 24
Machias..... "	22,876 88	Sag Harbor..... "	12,808 00	Plymouth..... "	2,607 00
Frenchman's Bay. "	34,899 66	Greenport..... "	7,391 11	Ocracoke..... "	1,428 15
Penobscot..... "	40,809 25	New-York..... "	931,193 74	Charleston.... S. C.	31,910 27
Belfast..... "	44,835 22	Cape Vincent.... "	2,496 19	Georgetown.... "	3,277 19
Bangor..... "	27,571 64	Cold Spring..... "	2,698 12	Beaufort..... "	—
Waldoborough... "	103,593 51	Perth Amboy... N. J.	22,765 89	Savannah..... Ga.	22,265 69
Wiscasset..... "	19,718 86	Bridgetown..... "	14,835 07	Sunbury..... "	—
Bath..... "	103,795 91	Burlington..... "	6,797 05	Brunswick..... "	489 67
Portland..... "	97,571 70	Camden..... "	15,663 41	Hardwick..... "	—
Saco..... "	9,825 88	Newark..... "	5,773 33	St. Mary's..... "	1,429 87
Kennebunk..... "	11,204 44	Little Egg Harbor. "	6,639 26	Pensacola..... Fla.	2,322 79
York..... "	1,263 66	Great Egg Harbor. "	16,421 79	St. Augustine... "	—
Portsmouth..... N. H.	25,427 54	Philadelphia.... Pa.	222,428 90	St. Mark's..... "	281 60
Burlington..... Vt.	3,932 31	Presque Isle..... "	8,210 35	St. John's..... "	309 92
Newburyport.... Mass.	26,706 80	Pittsburg..... "	53,734 34	Appalachicola... "	2,050 36
Ipswich..... "	492 55	Wilmington.... Del.	6,816 67	Key West..... "	4,400 10
Gloucester..... "	23,436 11	New-Castle..... "	5,064 19	Mobile..... Ala.	27,327 01
Salem..... "	30,498 78	Baltimore..... Md.	160,511 94	Pearl River..... Miss.	1,236 21
Beverly..... "	3,948 36	Oxford..... "	12,636 45	Vicksburg..... "	168 48
Marblehead..... "	4,351 51	Vienna..... "	14,469 87	New-Orleans.... La.	251,900 14
Boston..... "	342,936 09	Snow Hill..... "	9,851 59	Teche..... "	1,384 79
Plymouth..... "	10,723 10	St. Mary's..... "	2,290 48	Nashville..... Tenn.	3,587 67
Fall River..... "	12,070 50	Town Creek..... "	2,124 73	Louisville..... Ky.	12,937 90
New-Bedford.... "	131,409 46	Annapolis..... "	2,659 58	St. Louis..... Mo.	34,165 46
Barnstable..... "	72,997 44	Georgetown..... D. C.	22,903 46	Chicago..... Ill.	23,103 45
Edgartown..... "	8,079 19	Alexandria..... Va.	10,111 87	Cuyahoga..... Ohio	36,070 50
Nantucket..... "	26,752 71	Norfolk..... "	23,661 25	Sandusky..... "	4,858 38
Providence..... R. I.	15,552 55	Petersburg..... "	2,927 41	Cincinnati..... "	14,187 18
Bristol..... "	12,177 63	Richmond..... "	6,835 14	Miami..... "	3,236 13
Newport..... "	10,320 19	Yorktown..... "	5,241 52	Detroit..... Mich.	40,319 46
Middletown.... Conn.	12,757 53	Tappahannock... "	5,659 69	Michilimackinac. "	1,455 40
New-London.... "	40,407 67	Acomack C. H.... "	4,311 78	Galveston..... Texas	3,667 16
Stonington..... "	20,392 51	East River..... "	1,630 84	Point Isabel.... "	657 49
New-Haven..... "	18,398 44	Yeocomico..... "	3,888 57	Saluria..... "	588 52
Fairfield..... "	24,403 60	Cherry me..... "	1,037 16	Astoria..... O'gn	1,063 43
Champlain..... N. Y.	4,207 70	Wheeling..... "	3,923 89	San Francisco... Cal.	58,063 54
Sackett's Harbor. "	7,105 93	Wilmington.... N. C.	12,387 45	Sonora..... "	372 43
Oswego..... "	26,323 21	Newbern..... "	4,891 65	Milwaukee..... Wis.	2,946 10
Niagara..... "	605 94	Washington.... "	6,615 58		
Genesee..... "	686 01	Edenton..... "	1,128 08		
Oswegatchie.... "	1,985,34	Camden..... "	12,310 52		

STATEMENT OF DOMESTIC EXPORTS FROM UNITED STATES, YEAR ENDING JUNE 30, 1851.

WHITHER EXPORTED.	TOTAL VALUE OF DOMESTIC EXPORTS.			
	In American vessels	In foreign vessels	To each country	To the dominions of each power
Russia.....	\$1,187,116	\$278,588	\$1,465,704	\$1,465,704
Prussia.....	5,152	75,317	80,469	80,469
Sweden and Norway.....	198,269	562,531	760,800	821,957
Swedish West Indies.....	58,924	2,233	61,157	
Denmark.....	2,913	89,344	92,257	994,944
Danish West Indies.....	804,909	97,778	902,687	
Hanse Towns.....	550,542	4,855,414	5,405,956	5 405,956
Holland.....	711,724	1,199,391	1,911,115	2,567,934
Dutch East Indies.....	168,226	36,204	204,430	
Dutch West Indies.....	341,397	25,501	366,898	
Dutch Guiana.....	85,491	—	85,491	
Belgium.....	2,335,077	374,316	2,709,393	2,709,393
England.....	72,200,571	32,921,350	105,121,921	124,223,563
Scotland.....	2,004,306	1,806,697	3,811,003	
Ireland.....	203,335	395,353	598,688	
Gibraltar.....	91,616	86,288	177,904	
Malta.....	60,261	3,800	64,061	124,223,563
British East Indies.....	451,670	58,236	512,906	
Cape of Good Hope.....	158,666	3,225	161,891	
Mauritius.....	—	16,882	16,882	
Honduras.....	190,507	23,299	213,806	25,660,925
British Guiana.....	384,266	156,288	540,554	
British West Indies.....	2,292,923	1,650,637	3,943,560	
Canada.....	3,585,571	2,250,263	5,835,834	
British American Colonies.....	492,627	2,731,926	3,224,553	11,755,814
France on the Atlantic.....	23,864,292	702,775	24,567,067	
France on the Mediterranean.....	588,172	146,846	735,018	
French West Indies.....	217,319	72,260	289,579	
Miquelon and other French Fisheries.....	3,715	—	3,715	339,647
French Guiana.....	45,693	—	45,693	
Bourbon.....	16,607	3,246	19,853	
Spain on the Atlantic.....	759,853	198,860	958,713	
Spain on the Mediterranean.....	87,638	4,369,693	4,457,331	11,755,814
Teneriffe and other Canaries.....	8,765	4,775	13,540	
Manilla and Philippine Islands.....	125,544	—	125,544	
Cuba.....	5,039,718	199,558	5,239,276	
Other Spanish West Indies.....	861,286	100,124	961,410	339,647
Portugal.....	83,945	83,397	167,342	
Madeira.....	68,474	26,115	94,589	
Fayal and other Azores.....	15,411	4,829	20,240	
Cape de Verd Islands.....	57,476	—	57,476	1,736,834
Italy generally.....	906,791	830,043	1,736,834	
Sicily.....	3,305	38,438	41,743	41,743
Sardinia.....	136,361	174,527	310,888	310,888
Trieste and other Austrian Adriatic ports.....	1,465,822	799,751	2,265,573	2,265,573
Turkey, Levant, &c.....	162,204	—	162,204	162,204
Hayti.....	1,380,447	298,925	1,679,372	1,679,372
Mexico.....	916,173	98,517	1,014,690	1,014,690
Central Republic of America.....	217,691	5,611	223,302	223,302
New Grenada.....	2,413,568	94,133	2,507,701	2,507,701
Venezuela.....	757,003	97,776	854,779	854,779
Brazil.....	2,841,983	286,973	3,128,956	3,128,956
Cisplatine Republic.....	25,204	6,907	32,711	32,711
Argentine Republic.....	463,533	196,317	659,852	659,852
Chili.....	1,581,798	27,079	1,608,877	1,608,877
Peru.....	186,320	63,440	249,760	249,760
China.....	2,111,029	44,916	2,155,945	2,155,945
West Indies generally.....	68,761	8,175	76,936	76,936
South America generally.....	36,196	—	36,196	36,196
Asia generally.....	70,586	—	70,586	70,586
Africa generally.....	1,175,049	70,312	1,245,361	1,245,361
South Seas and Pacific Ocean.....	601,146	—	601,146	601,146
Total.....	\$137,934,539	\$58,755,179	\$196,689,718	\$196,689,718

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NOTICES OF THE PRESS—INDUSTRIAL RESOURCES.

De Bow's Industrial Resources.—Among the sources of reliable statistical information may be mentioned, the two principal commercial magazines of the country—the *Merchants' Magazine* of New-York, and *De Bow's Review of the Southern and Western States*, conducted by J. D. B. DeBow, professor of political economy, &c., in the University of Louisiana, and published at New-Orleans. The former is well known to the mercantile community; but the latter, though extensively patronized, and a standard authority at the South, has not received from the merchants of the North that support which an enlightened regard to their own interests would seem to demand. The statistical information embodied in its pages respecting the staples of the South and West, which form the basis of a great part of all our leading commercial transactions, is immense. More than three large volumes have been published upon COTTON alone, and more than a thousand pages upon SUGAR. In point of literary merit too, it is unsurpassed. The leading articles have been written with a vigor of thought and purity of style not excelled, if equalled in the annals of commercial literature, and the intellectual tastes fostered by them are exceedingly favorable to mental growth and worldly prosperity. Mr. De Bow has published a condensation of all the important papers, articles and statistics, that have appeared in the twelve published volumes of his *Review*, in three, entitled; "The INDUSTRIAL RESOURCES OF THE SOUTHERN AND WESTERN STATES," and I sincerely trust that no intelligent merchant will overlook the advantages he will enjoy, in possessing this vast depository of reliable and valuable information.—*Freedley's Practical Treatise on Business*, 1852.

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De Bow's Industrial Resources.—The work is arranged after the manner of an encyclopedia, and abounds in a variety of useful information, and many valuable statistics compiled from the returns included in the last census. It is a work which should be in the hands of every merchant and business man, who could not fail to derive profitable information from its pages. Mr. De Bow appears to have spared neither pains nor labor in compiling this varied and comprehensive work.—*Baltimore American*.

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Wishing that your persevering exertions may be justly appreciated, and may be attended with encouragement and success, I am your obedient servant.

H. CLAY.

J. D. B. DE BOW, Esq.

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useful information in relation to the great staples of the South, than can be found in any other periodical. As these staples form the basis of a great part of all our leading commercial transactions, the above work is an indispensable part of every business man's library.—*Rail-Road Journal, N. Y.*

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De Bow's Review.—The work is printed in a style creditable to the press, and its contents are such as to render it a valuable adjunct to the similar work devoted to the commerce of the United States, published by Hunt, of New-York, &c.—*Boston Daily Ado.*

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De Bow's Review.—It abounds, as usual, with able articles on the commercial, social and political questions of the South and West, and in statistical information. It is a work that ought to be cherished with liberality by the southern people, and it ought to be consulted by all statesmen, who aspire to the distinction of nationality.—*Southern Press, Washington.*

De Bow's Review.—It is conducted by a man of rare capacities and qualifications for such a work, as its pages abundantly attest. In addition to the editor, it has among its contributors some of the ablest and most distinguished writers of the South and West.—*Washington Union.*

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